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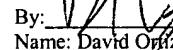
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|             |  |                 |                     |
|-------------|--|-----------------|---------------------|
| Applicant:  | FUNCK et al.   | Examiner:       | Bradley J. Van Pelt |
| Serial No.: | 10/009165  | Group Art Unit: | 3682                |
| Filed:      | November 7, 2001   | Docket No.:     | 11709.0046USWO      |
| Title:      | METHOD IN AND DEVICE FOR THE MANUAL LUBRICATION OF A PLURALITY OF LUBRICATION POINTS |                 |                     |

CERTIFICATE UNDER 37 CFR 1.10:

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By:   
Name: David Offiz

APPELLANT'S BRIEF ON APPEAL

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**23552**  
PATENT TRADEMARK OFFICE

Sir:

This Brief is presented in support of the Appeal filed February 2, 2005, from the final rejection of Claims 1-10 of the above-identified application, as set forth in the Office Action mailed August 2, 2004.

A check for \$250.00 to cover the required fee for filing this Brief is enclosed.

An oral hearing is requested. A separate request for oral hearing with the appropriate fee will be filed within two months of the Examiner's Answer.

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App. No. 10/009,165  
Group Art Unit 3682

**I. REAL PARTY OF INTEREST**

The Real Party of Interest is Assalub AB, by way of an assignment, recorded on November 7, 2001, at reel 012618, frame 0587.

App. No. 10/009,165  
Group Art Unit 3682

**II. RELATED APPEALS AND INTERFERENCES**

There are no prior or pending related appeals, interferences, or judicial proceedings for the above-referenced patent application.

### III. STATUS OF CLAIMS

Claims 1-10 are pending. All of the pending claims are rejected and all are the subject of this Appeal. All pending claims are listed in the Claims Appendix.

Claims 1, 2, 4-7, 9 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,068,164, issued to Totaro, in view of U.S. Patent No. 5,813,496, issued to Hyvönen et al., and JP Publication No. 5-170298, issued to Shida.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,068,164, issued to Totaro, in view of U.S. Patent No. 5,813,496, issued to Hyvönen et al., and JP Publication No. 5-170298, issued to Shida, as applied to claims 1, 2, 4-7, 9 and 10 above, and further in view of U.S. Patent No. 6,123,174, issued to Elkin et al.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,068,164, issued to Totaro, in view of U.S. Patent No. 5,813,496, issued to Hyvönen et al., and JP Publication No. 5-170298, issued to Shida, as applied to claims 1, 2, 4-7, 9 and 10 above, and further in view of U.S. Patent No. 5,923,572, issued to Pollock.

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,123,174, issued to Elkin et al., in view of U.S. Patent No. 5,813,496, issued to Hyvönen, in view of U.S. Patent No. 5,923,572, issued to Pollock.

App. No. 10/009,165  
Group Art Unit 3682

**IV. STATUS OF AMENDMENTS**

No amendments were filed after the final Office Action was mailed on August 2, 2004.

## V. SUMMARY OF THE CLAIMED SUBJECT MATTER

A summary of the claimed invention follows. The summary includes references to an embodiment disclosed in the specification.

Independent claim 1 is directed to a system for manual lubrication of an apparatus having a plurality of lubrication points **10** in which a quantity of lubricant is individually predetermined for each lubrication point **10**.<sup>1</sup> See FIG. 1 (reproduced below in Illustration A) for one example of a system for manual lubrication according to claim 1. The lubrication points **10** of the apparatus are provided with an identification element **11**, in which information on the quantity of lubricant to be administered to each individual lubrication point **10** is retrieved from a fixed computer memory **12**.<sup>2</sup> The apparatus also includes a lubricant gun **1** having a lubrication nozzle **6** which contacts a single lubrication point **10** delivering the lubricant to the single lubrication point **10**.<sup>3</sup> In addition, the identification element **11** associated with the lubrication point **10** is detected during the lubrication of the lubrication point **10**, by a lubrication point identification device **9** arranged at the lubrication nozzle **6** and information on the predetermined quantity of lubricant of the identified lubrication point **10** is retrieved from the fixed computer memory **12**.<sup>4</sup> The quantity of lubricant is administered to the individual lubrication point **10** and the information on the lubrication carried out for each individual lubrication point **10** is stored in the fixed computer memory **12**.<sup>5</sup>

Independent claim 6 teaches a device for manual lubrication of an apparatus having a plurality of lubrication points **10** in which a quantity of lubrication is individually predetermined for each lubrication point **10**.<sup>6</sup> See FIG. 1 (reproduced below in Illustration A) for one example of a device for manual lubrication according to claim 6. The device includes an identification

<sup>1</sup> See Abstract\*, lines 1-2

<sup>2</sup> See Abstract\*, lines 2-3, 5-7; page 2, lines 3-4 and 26-28

<sup>3</sup> See Abstract\*, line 9-10; page 2, lines 3 and 5-8

<sup>4</sup> See page 2, lines 3-8 and 26-28

<sup>5</sup> See Abstract\*, line 8; page 2, lines 28-30

<sup>6</sup> See Abstract\*, lines 1-2

Abstract\*, please note the Abstract was amended in the Amendment & Response filed on April 16, 2003.

element 11 unique to each lubrication point 10 of the apparatus.<sup>7</sup> The device also includes a lubricant gun 1 having an indicating element 5, a lubricant reservoir connected to a pump device, and a measuring device 4 connected to a nozzle 6.<sup>8</sup> Additionally, a lubrication point identification device 9 is connected to the nozzle 6.<sup>9</sup> The lubrication identification device 9 automatically identifies the lubrication point 10 in question and its lubrication requirement from the identification element 11.<sup>10</sup> A control element 8 is connected to the measuring device 4 and the pump device in which the control element 8 is a mobile memory containing stored data on the lubrication requirement of each individual lubrication point 10 of the apparatus.<sup>11</sup> The lubrication requirement of each individual lubrication point 10 is transferred to the control element 8.<sup>12</sup> The control element 8 also stores information on the lubrication carried out at the individual lubrication points 10.<sup>13</sup>

Independent claim 10 is directed to a lubricant gun 1 for manual lubrication of an apparatus having a plurality of lubrication points 10 in which a quantity of lubrication is individually predetermined for each lubrication point 10.<sup>14</sup> See FIG. 1 (reproduced below in Illustration A) for one example of a lubricant gun for manual lubrication according to claim 10. The lubrication gun 1 includes a lubrication nozzle 6 for contacting a single lubrication point 10 at a time.<sup>15</sup> In addition, the lubrication gun 1 includes a pump device connected to a lubricant reservoir and a measuring device 4 for measuring an amount of fed lubricant.<sup>16</sup> Additionally, a control element 8 is connected to the measuring device 4 and the pump device.<sup>17</sup> Furthermore, a mobile memory is connected to the control element 8 and contains stored data on a lubrication

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<sup>7</sup> See Abstract\*, lines 2-3

<sup>8</sup> See Abstract\*, lines 2-3

<sup>9</sup> See page 2, line 3

<sup>10</sup> See page 2, lines 3-8

<sup>11</sup> See page 2, lines 1-2 and 13-15

<sup>12</sup> See page 2, lines 13-15; page 3, lines 8-9

<sup>13</sup> See Abstract\* line 8; page 2, lines 25-26 and 28-30

<sup>14</sup> See Abstract\*, lines 1-2

<sup>15</sup> See Abstract\*, lines 9-10; page 2, lines 5-6

<sup>16</sup> See Abstract\*, lines 9-10; page 3, lines 15-17

<sup>17</sup> See page 2, lines 1-2

Abstract\*, please note the Abstract was amended in the Amendment & Response filed on April 16, 2003.

requirement of each individual lubrication point **10** of the apparatus.<sup>18</sup> Moreover, a lubrication point identification device **9** is connected with the nozzle **6** automatically identifying the lubrication point **10** and associated lubrication requirement using an identification element **11** unique to the lubrication point **10**.<sup>19</sup> The mobile memory communicates to the control element **8** a lubricant quantity specification for each one of the plurality of lubrication points **10**, and information on the lubrication carried out at each one of the plurality of lubrication points **10** is stored in the mobile memory.<sup>20</sup>

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<sup>18</sup> See page 2, lines 26-28

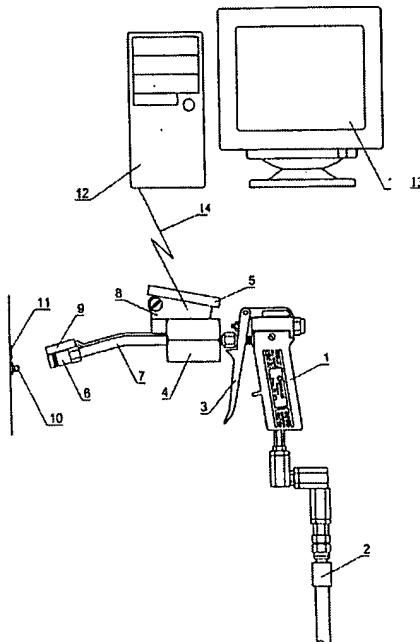
<sup>19</sup> See page 3, lines 7-10

<sup>20</sup> See Abstract\* lines 5-8; page 2, lines 25-30; page 3, lines 10-12 and 19

Abstract\*, please note the Abstract was amended in the Amendment & Response filed on April 16, 2003.

**Illustration A: FIG 1 of the Application**

FIG 1



1. lubricant gun
2. line connecting lubricant gun to
3. lever
4. measuring device
5. indicating element
6. nozzle
7. tube
8. control element
9. lubrication point identification device
10. lubrication point
11. identification element
12. fixed computer memory
13. computer screen
14. depicts communication between the control element and the computer

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1, 2, 4-7, 9 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,068,164 (Totaro), in view of U.S. Patent No. 5,813,496 (Hyvönen et al.) and JP Publication No. 5-170298 (Shida).

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,068,164 (Totaro) in view of U.S. Patent No. 5,813,496 (Hyvönen et al.) and JP Publication No. 5-170298 (Shida) as applied to claims 1, 2, 4-7, 9 and 10 above, and further in view of U.S. Patent No. 6,123,174 (Elkin et al.).

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,068,164 (Totaro) in view of U.S. Patent No. 5,813,496 (Hyvönen et al.) and JP Publication No. 5-170298 (Shida) as applied to claims 1, 2, 4-7, 9 and 10 above, and further in view of U.S. Patent No. 5,923,572 (Pollock).

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,123,174 (Elkin et al.) in view of U.S. Patent No. 5,813,496 (Hyvönen), in view of U.S. Patent No. 5,923,572 (Pollock).

**The issues presented for review:**

- A. Whether claims 1, 2, 4-7, 9 and 10 are obvious over Totaro in view of Hyvönen and Shida rendering them unpatentable under 35 U.S.C. § 103(a).
- B. Whether claim 3 is obvious over Totaro in view of Hyvönen and Shida and further in view of Elkin et al., rendering it unpatentable under 35 U.S.C. § 103(a).
- C. Whether claim 8 is obvious over Totaro in view of Hyvönen and Shida and further in view of Pollock, rendering it unpatentable under 35 U.S.C. § 103(a).
- D. Whether claims 1-10 are obvious over Elkin in view of Hyvönen in view of Pollock.

## VII. ARGUMENT

### A. Totaro in view of Hyvönen and Shida, Does Not Render Obvious Claims 1, 2, 4-7, 9 and 10 under 35 U.S.C § 103(a)

Independent claim 1 teaches a system for manual lubrication of an apparatus having a plurality of lubrication points 10 in which a quantity of lubricant is individually predetermined for each lubrication point 10. The lubrication points 10 of the apparatus are provided with an identification element 11, in which information on the quantity of lubricant to be administered to each individual lubrication point 10 is retrieved from a fixed computer memory 12. The apparatus also includes a lubricant gun 1 having a lubrication nozzle 6 that contacts a single lubrication point 10 delivering the lubricant to the single lubrication point 10. In addition, the identification element 11 associated with the lubrication point 10 is detected during the lubrication of the lubrication point 10, by a lubrication point identification device 9 arranged at the lubrication nozzle 6 and information on the predetermined quantity of lubricant of the identified lubrication point 10 is retrieved from the fixed computer memory 12. The quantity of lubricant is administered to the individual lubrication point 10 and the information on the lubrication carried out for each individual lubrication point 10 is stored in the fixed computer memory 12.

Independent claim 6 teaches a device for manual lubrication of an apparatus having a plurality of lubrication points 10 in which a quantity of lubrication is individually predetermined for each lubrication point 10. The device includes an identification element 11 unique to each lubrication point 10 of the apparatus. The device also includes a lubricant gun 1 having an indicating element 5, a lubricant reservoir connected to a pump device, and a measuring device 4 connected to a nozzle 6. Additionally, a lubrication point identification device 9 is connected to the nozzle 6. The lubrication identification device 9 automatically identifies the lubrication point 10 in question and its lubrication requirement from the identification element 11. In addition, a

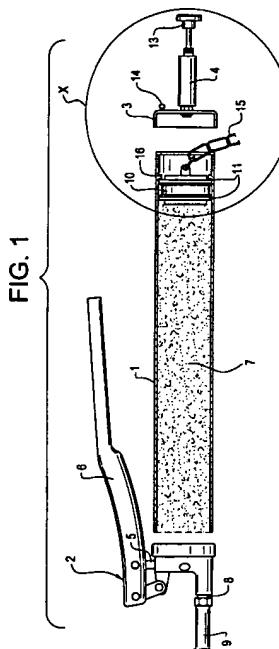
control element **8** is connected to the measuring device **4** and the pump device in which the control element **8** is a mobile memory containing stored data on the lubrication requirement of each individual lubrication point **10** of the apparatus. The lubrication requirement of each individual lubrication point **10** is transferred to the control element **8**. The control element **8** also stores information on the lubrication carried out at the individual lubrication points **10**.

Independent claim 10 teaches a lubricant gun **1** for manual lubrication of an apparatus having a plurality of lubrication points **10** in which a quantity of lubrication is individually predetermined for each lubrication point **10**. The lubrication gun **1** includes a lubrication nozzle **6** for contacting a single lubrication point **10** at a time. In addition, the lubrication gun **1** includes a pump device connected to a lubricant reservoir and a measuring device **4** for measuring an amount of fed lubricant. A control element **8** is connected to the measuring device **4** and the pump device. Furthermore, a mobile memory is connected to the control element **8** and contains stored data on a lubrication requirement of each individual lubrication point **10** of the apparatus. Moreover, a lubrication point identification device **9** is connected with the nozzle **6** automatically identifying the lubrication point **10** and associated lubrication requirement using an identification element **11** unique to the lubrication point **10**. The mobile memory communicates to the control element **8** a lubricant quantity specification for each one of the plurality of lubrication points **10**, and information on the lubrication carried out at each one of the plurality of lubrication points **10** is stored in the mobile memory.

### Totaro

Totaro relates to a manual grease gun comprising a tubular reservoir 1 for the grease 7 closed by a rear cover 5 that is manually controlled.<sup>21</sup> The grease 7 is delivered through a grease delivery nozzle 8.<sup>22</sup> See FIG. 1 (reproduced below in Illustration B)

Illustration B: FIG. 1 Totaro



The Office Action states that Totaro fails to show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the lubrication points of the apparatus are provided with an identification element, based upon which information on the quantity of lubrication that is to be administered to each individual point in each instance of lubrication is retrievable from a memory, and wherein, in the lubrication of a lubrication point of the apparatus, the identification element associated with the lubrication point is detected by a lubrication point identification device arranged at the lubrication nozzle and information on the predetermined quantity of lubricant for the lubrication

<sup>21</sup> See Abstract, lines 1-2

<sup>22</sup> See, col. 7, l. 57

point identified is retrieved from the memory, following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out is stored in the memory;

measuring device, control element, lubrication identification device.

To remedy these deficiencies, the Office Action asserts that Hyvönen shows an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point. Shida shows an identification element (13), based upon which information on the quantity of fluid that is to be administered to each individual point in each instance of filling is retrievable from a memory, and wherein, in the filling of a point of the apparatus, the identification element associated with the point is detected by a point identification device (12) arranged at the nozzle and information on the predetermined quantity of fluid for the point identified is retrieved from the memory, and information on the filling carried out is stored in the memory;

measuring device, control element, lubrication identification device (all inherent features of Shida).

However, Hyvönen and Shida fall far short of teaching the system and device of the present invention.

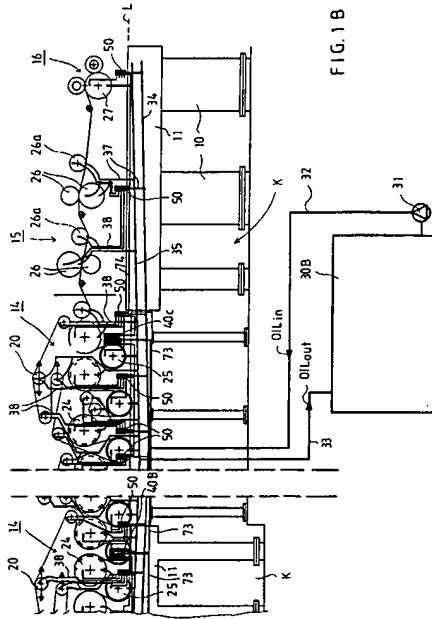
### Hyvönen

Hyvönen teaches an automated system for monitoring and controlling the circulation of oil. In the system, oil is fed from a storage facility (also designated as lubrication center) 30B through a series of pipes 32, 34, 36, 38 to respective lubrication points 20-27, and is fed back to the lubrication center through a system of return pipes 37, 35, 33.<sup>23</sup> See FIG. 1B (reproduced below in Illustration C)

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<sup>23</sup> See, i.e. Hyvönen, col. 5, ll. 39-50

### **Illustration C: FIG. 1B Hyvönen**



## Shida

Shida is directed to an automobile gasoline pump nozzle 11A, which is manually controlled by a user. The device is equipped with a bar code scanner 12 mounted on an oil feeding nozzle body 11. When the nozzle 11A is inserted into an oil feeding port 10, the bar code scanner 12 reads a bar code 13 attached in the vicinity of the oil feeding port 10, which has customer information such as a car number, a customer code and oil feeding volume information. The scanner sends the customer information to a superior device through a transmitting means.<sup>24</sup>

<sup>24</sup> See, i.e. Shida, Abstract

Illustration D: FIG. 1 Shida

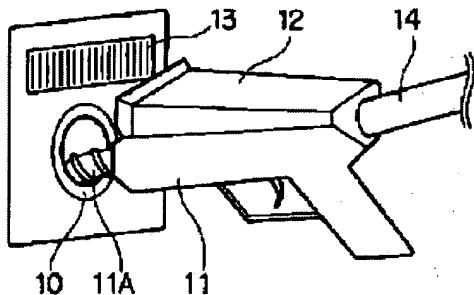


FIG. 1

The Office Action asserts that to modify the apparatus of Totaro so as to provide an apparatus with a plurality of lubrication points would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teaching of Hyvönen that such an arrangement improves functionality of the system. Furthermore, the Office Action asserts that to modify the apparatus of Totaro so as to provide a scanning and storage device would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teachings of Shida that such an arrangement improves monitoring amounts used.

Applicants assert the above reasoning is incorrect. The references are non-analogous and it would not have been obvious to one of skill in the art to combine them. Moreover, there is no motivation in the prior art for combining the manual grease gun of Totaro with an automated system for monitoring and controlling the circulation of oil of Hyvönen and the gasoline pump nozzle of Shida.

1. Non-analogous References

This combination would not be obvious to one of skill in the art of manual lubrication because the hand grease gun of Totaro is manually operated while the circulation system of Hyvönen is a fully automated system. Claims 1, 6 and 10 recite **manual** lubrication of an apparatus having a plurality of lubrication points.

An automatic lubrication system provides a continuous lubricant supply and does not rely upon an operator for its successful application. In contrast, **manual** lubrication, as recited in claims 1, 6 and 10, implies that the system relies on an operator for its successful operation. Support for the interpretation of manual versus automatic lubrication can be found in the enclosed excerpt from Nica, A: Theory and Practice of Lubrication Systems, Publishing House of Rumanian Academy, Bucharest, 1969, pages 73-77.

Furthermore, Shida is directed to an automobile gasoline pump nozzle. Shida relates to vehicle fueling systems, i.e. to delivering a comparatively large amount of fuel to a fuel tank, whereas lubrication of lubrication points, as recited in claims 1, 6 and 10, relates to delivering a small and well-defined amount of lubricant to each lubrication point. In addition, Shida teaches that the oil feeding volume should be retrieved from the bar code, whereas according to the claimed invention, the volume to be delivered should be retrievable from memory.

Therefore, it is respectfully submitted that one skilled in the art of manual lubrication would not be motivated to combine the non-analogous automobile gasoline pump nozzle disclosed by Shida with either of the lubrications systems disclosed by Totaro and Hyvönen.

## 2. No Motivation to Combine References

Totaro describes a main advantage of its manual hand grease gun as the ability to use the device for an extended period of time without needing auxiliary equipment:

Accordingly, it is an object of the present invention to provide a hand grease gun device of the type known as a syringe grease gun wherein the pressure piston is not operated by a spring, rather by compressed air, which device may be used outdoors for an unlimited period of time (provided adequate grease supply is available) without needing auxiliary equipment.<sup>25</sup>

In other words, Totaro discloses a manual, self-contained device and teaches away from devices that require "auxiliary equipment".

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<sup>25</sup> See, Totaro i.e. col. 5, lines 18-24

It is respectfully submitted that one skilled in the art of **manual** lubrication would not be motivated to combine Totaro with either Hyvönen or Shida because Totaro teaches away from systems that require auxiliary equipment, while both Hyvönen and Shida require systems with auxiliary equipment. For example, Hyvönen discloses a system with a significant amount of piping and containment units. Shida discloses an automobile gasoline pump nozzle, which presumably requires at least a corresponding gasoline pump and large underground fuel container.

Moreover, Hyvönen distinguishes prior art manual lubrication systems as follows:

As known from the prior art, the oil quantities of each lubrication point are determined and sent manually to be substantially invariable. It is an important disadvantage of such prior art systems that if a change in the operation values of the paper machine requires changes in the oil quantities at the lubrication points, these changes must be carried out by means of manual regulation separately from the flow meter panels of each lubrication point.<sup>26</sup>

Therefore, Hyvönen distinguishes its automated lubrication system from prior art manual lubrication systems and teaches away from such manual lubrication systems. Thus, Hyvönen teaches away from any manual regulation of the flow of lubricant at the lubricant point.

The Office Action also asserts that to modify the apparatus of Totaro so as to provide an apparatus with a plurality of lubrication points would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teaching of Hyvönen that such an arrangement improves functionality of the system.

Applicants respectfully disagree with the above assertion for at least the following reasons. A combination of Hyvönen with Totaro would involve dismantling the Hyvönen system, which would render Hyvönen inoperable by removing the on-line supply channels and

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<sup>26</sup> See, i.e. Hyvönen, col. 1, ll. 38-45

replacing them with a manual lubricant gun, such as the one known from Totaro. Thus, the automatic system of Hyvönen would need to be taken apart to produce a manual system.

Therefore, it is respectfully suggested that one skilled in the art of manual lubrication would not be motivated to combine Hyvönen with Totaro because Hyvönen would have to be dismantled, rendering the system inoperable.

Furthermore, Shida teaches only the identification and data retrieval elements. The barcode scanner **12** reads a bar code **13** attached in the vicinity of the oil feeding port **10**. This code is transmitted to the computer/register in the gas station where the identification of the vehicle, including car number, customer code, and oil volume can be determined. The data read could not provide a specific fill volume, as Shida does not suggest identifying the current oil level in the tank, i.e. the tank may not be empty. Therefore, Shida fails to teach or suggest that the identification of the lubrication point is detected and information on the predetermined quantity of lubrication for the lubrication point identified is retrieved from memory, following which the quantity of lubricant is administered to the lubrication point as recited by claims 1, 6 and 10.

Moreover, Shida fails to teach or suggest a lubricant gun with a pump device and a measuring device as recited by claims 6 and 10. The measuring device for measuring an amount of fed lubricant and a control element connected to the measuring device and the pump device as recited by claims 6 and 10. Nor does Shida teach or suggest a mobile memory connected to the control element that contains stored data on a lubrication requirement of each individual lubrication point of the apparatus, wherein the mobile memory communicates to the control element a lubricant quantity specification as recited by claims 6 and 10.

As presented above, Hyvönen is combined with Totaro and Shida to reject independent claims 1, 6 and 10. However, Totaro discloses a hand grease gun that is manually controlled. Shida discloses an automobile gasoline pump nozzle. In view of the above comments, it is

respectfully asserted that one skilled in the art of manual lubrication would not be motivated to combine non-analogous art such as Hyvönen with either Totaro or Shida because Hyvönen discloses an automated system and teaches away from manual systems, while both Totaro and Shida disclose manual systems. As presented above, such a combination would involve dismantling Hyvönen. Furthermore, Totaro teaches away from the use of auxiliary equipment. In addition, Shida only teaches the transfer of information and fails to teach or suggest information on the predetermined quantity of lubrication of the lubrication point identified that is retrieved from memory. Neither Totaro, Hyvönen nor Shida, alone or in combination, teach or suggest the features recited in independent claims 1, 6 and 10. Nor do they teach or suggest such systems could be modified to arrive at the claimed invention. Nor do they teach or suggest all the claim limitations.

Applicants assert that claims 1, 6 and 10 are patentably distinguishable over the combination of Totaro, Hyvönen and Shida. Therefore, independent claims 1, 6 and 10 are patentable over the proposed combination of Totaro, Hyvönen and Shida and are in condition for allowance.

Additionally, for at least the same reasons discussed above for independent claims 1, 6 and 10, applicants believe dependent claims 2, 4-5, 7 and 9 are also in condition for allowance.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested.

**B. Totaro in view of Hyvönen and Shida and further in view of Elkin et al., Does Not Render Obvious Claim 3 under 35 U.S.C. § 103(a)**

Dependent claim 3 is not obvious under 35 U.S.C. § 103(a) over Totaro in view of Hyvonen and Shida and further in view of Elkin et al. for at least the same grounds discussed with respect to independent claim 1.

**C. Totaro in view of Hyvönen and Shida and further in view of Pollock, Does Not Render Obvious Claim 8 under 35 U.S.C. § 103(a)**

Dependent claim 8 is not obvious under 35 U.S.C. § 103(a) over Totaro in view of Hyvönen and Shida and further in view of Pollock for at least the same grounds discussed with respect to independent claim 6.

**D. Elkin in view of Hyvönen in view of Pollock, Does Not Render Obvious Claims 1-10 under 35 U.S.C. § 103(a)**

Independent claim 1 teaches a system for manual lubrication of an apparatus having a plurality of lubrication points **10** in which a quantity of lubricant is individually predetermined for each lubrication point **10**. The lubrication points **10** of the apparatus are provided with an identification element **11**, in which information on the quantity of lubricant to be administered to each individual lubrication point **10** is retrieved from a fixed computer memory **12**. The apparatus also includes a lubricant gun **1** having a lubrication nozzle **6** that contacts a single lubrication point **10** delivering the lubricant to the single lubrication point **10**. In addition, the identification element **11** associated with the lubrication point **10** is detected during the lubrication of the lubrication point **10**, by a lubrication point identification device **9** arranged at the lubrication nozzle **6** and information on the predetermined quantity of lubricant of the identified lubrication point **10** is retrieved from the fixed computer memory **12**. The quantity of lubricant is administered to the individual lubrication point **10** and the information on the lubrication carried out for each individual lubrication point **10** is stored in the fixed computer memory **12**.

Independent claim 6 teaches a device for manual lubrication of an apparatus having a plurality of lubrication points **10** in which a quantity of lubrication is individually predetermined for each lubrication point **10**. The device includes an identification element **11** unique to each lubrication point **10** of the apparatus. The device also includes a lubricant gun **1** having an indicating element **5**, a lubricant reservoir connected to a pump device, and a measuring device **4** connected to a nozzle **6**. Additionally, a lubrication point identification device **9** is connected to the nozzle **6**. The lubrication identification device **9** automatically identifies the lubrication point **10** in question and its lubrication requirement from the identification element **11**. A control element **8** is connected to the measuring device **4** and the pump device in which the control element **8** is a mobile memory containing stored data on the lubrication requirement of each

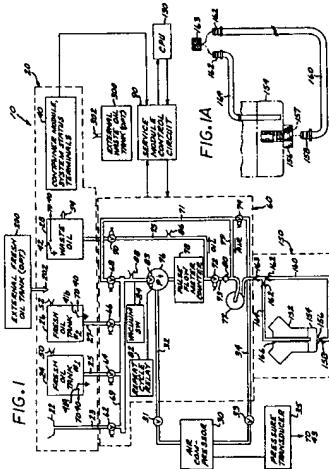
individual lubrication point **10** of the apparatus. The lubrication requirement of each individual lubrication point **10** is transferred to the control element **8**. The control element **8** also stores information on the lubrication carried out at the individual lubrication points **10**.

Independent claim 10 teaches a lubricant gun **1** for manual lubrication of an apparatus having a plurality of lubrication points **10** in which a quantity of lubrication is individually predetermined for each lubrication point **10**. The lubrication gun **1** includes a lubrication nozzle **6** for contacting a single lubrication point **10** at a time. In addition, the lubrication gun **1** includes a pump device connected to a lubricant reservoir and a measuring device **4** for measuring an amount of fed lubricant. Additionally, a control element **8** is connected to the measuring device **4** and the pump device. Furthermore, a mobile memory is connected to the control element **8** and contains stored data on a lubrication requirement of each individual lubrication point **10** of the apparatus. Moreover, a lubrication point identification device **9** is connected with the nozzle **6** automatically identifying the lubrication point **10** and associated lubrication requirement using an identification element **11** unique to the lubrication point **10**. The mobile memory communicates to the control element **8** a lubricant quantity specification for each one of the plurality of lubrication points **10**, and information on the lubrication carried out at each one of the plurality of lubrication points **10** is stored in the mobile memory.

Elkin

Elkin teaches a system for extracting fluid from a target reservoir 152 such as a crankcase for a vehicle engine, and injecting the proper type and quantity of fresh fluid into the reservoir 152.<sup>27</sup> See FIG. 1B (reproduced below in Illustration E)

Illustration E: FIGS. 1 and 1A of Elkin



The Office Action states that Elkin fails to show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

The Office Action further states that Elkin also does not disclose a lubricant gun with a lubricant reservoir which is connected by way of a pump device and the pump device connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point, with which memory the lubricant gun is designed to communicate for transfer to the control element of the lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points, and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a

<sup>27</sup> Abstract, i.e. Elkin, ll. 1-5

lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.

To remedy the deficiencies, the Office Action asserts Hyvönen renders obvious an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point. Furthermore, the Office Action states that Pollock renders obvious a gun **12** with a reservoir (inherent) which is connected by way of a pump device **45** and a measuring device **44** to a nozzle (end portion of dispenser), a control element **24** connected to the measuring device and the pump device connected to which control element is a memory containing stored data **30** of an individual point, with which memory the gun is designed to communicate for transfer to the control element of a quantity specification (column 4, lines 4-17) for a lubrication point and for feeding information stored in the control element on the operation carried out at the individual point (also column 4, lines 4-17), and a point identification device **21** arranged in connection with the nozzle and designed, when the nozzle is connected to a point, to automatically identify the point in question and its requirement by means of the identification element together with means for storing in the memory data on the quantity administered to the point in question in each operation (column 3, lines 65-67, column 4, lines 1-3).

However, Hyvönen and Pollock fall far short of teaching the system, device and lubricant gun of the present invention.

**Hyvönen**

Hyvönen teaches an automated system for monitoring and controlling the circulation of oil. In the system, oil is fed from a storage facility (also designated as lubrication center) **30B** through a series of pipes **32, 34, 36, 38** to respective lubrication points **20-27**, and is fed back to the lubrication center through a system of return pipes **37, 35, 33**.<sup>28</sup> *See FIG. 1B (reproduced above in Illustration C)*

**Pollock**

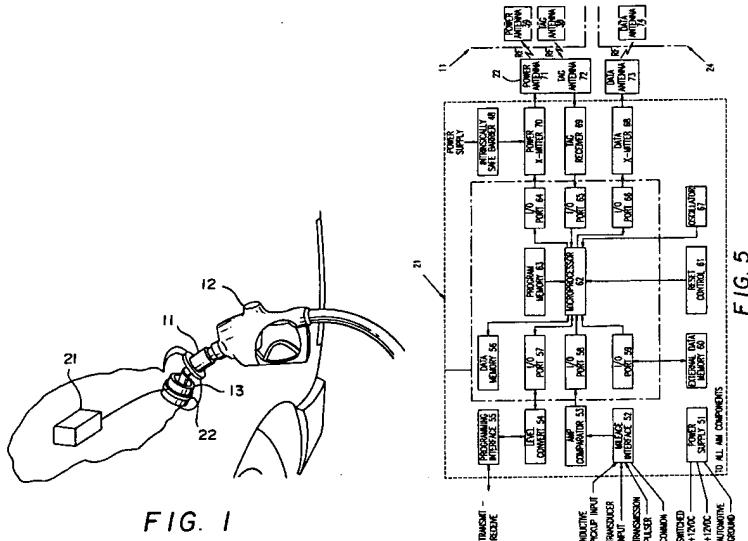
Pollock teaches a device for controlling, authorizing, and accounting for gasoline delivered to an automobile. The device includes a radio frequency identification tag **38** mounted on the fuel nozzle **11** and an automotive information module **22** mounted in the vehicle.<sup>29</sup> *See FIGS. 1 and 5 (reproduced below in Illustration F)*

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<sup>28</sup> *See*, i.e. Hyvönen, col. 5, ll. 39-50

<sup>29</sup> *See*, i.e. Pollock, Abstract, ll. 1-4

### **Illustration F: FIGS. 1 and 5 of Pollock**



The Office Action alleges that to modify the apparatus of Elkin so as to include an apparatus with a plurality of lubrication points with a quantity of lubricant individually determined for each lubricant point would have been obvious to one of skill in the art in view of the teachings of Hyvönen that such an arrangement improves overall bearing lives for rollers. Furthermore, the Office Action states that it would have been obvious to one of skill in the art to modify the dispensing apparatus of Elkin with the gun dispenser, and the control element to communicate with an identification point, as taught by Pollock, for the purpose of eliminating the need for operator input, which reduces the labor cost.

Applicants assert that the above reasoning is incorrect. The references are non-analogous and it would not have been obvious to one of skill in the art of manual lubrication to combine them. Moreover, there is no motivation in the prior art for combining the system of extracting/replacing large quantities of fluids from a crankcase of Elkin with an automated system for monitoring and controlling the circulation of oil of Hyvönen and the gasoline pump nozzle of Pollock.

1. Non-analogous References

This combination would not be obvious to one of skill in the art of manual lubrication of an apparatus having a plurality of lubrication points as recited by claims 1, 6 and 10, because Elkin teaches a system for extraction and replacement of large quantities of fluids in a crankcase, while Hyvönen teaches a fully automated circulation system. Claims 1, 6 and 10 recite a **manual** lubrication system having a plurality of lubrication points. Automatic lubrication systems provide a continuous lubricant supply and do not rely upon an operator for its successful application. In contrast, **manual** lubrication, recited in claims 1, 6 and 10, implies that the system relies on an operator for its successful operation. Support for the interpretation of manual versus automatic lubrication can be found in the enclosed excerpt from Nica, A: Theory and Practice of Lubrication Systems, Publishing House of Rumanian Academy, Bucharest, 1969, pages 73-77.

Furthermore, Pollock is directed to a manual device for controlling, authorizing and accounting for the amount of gasoline delivered to an automobile. Pollock relates to vehicle fueling systems, i.e. to delivering a comparatively large amount of fuel to a fuel tank, whereas lubrication of lubrication points relates to delivering a small and well-defined amount of lubricant to the lubrication point.

Therefore, it is respectfully suggested that one skilled in the art of manual lubrication would not be motivated to combine the non-analogous automobile gasoline pump nozzle disclosed by Pollock with either of the lubrications systems disclosed by Elkin and Hyvönen.

2. No Motivation to Combine References

Elkin is not directed to a system for manual lubrication of an apparatus. Instead, Elkin discloses an apparatus to extract and replace a large quantity of oil from a crankcase of an automobile. In other words, while the systems and devices disclosed and claimed herein are directed to manual lubrication of an apparatus, Elkin is directed to replacement of fluids. One

skilled in the art of manual lubrication of an apparatus would not turn to the apparatus disclosed by Elkin in solving problems associated with systems and devices for the manual lubrication of an apparatus.

The rejection also states that Elkin neither discloses nor suggests a system or device for manual lubrication of an apparatus having a plurality of lubrication points. The Office Action alleges that to modify the Elkin so as to provide an apparatus with a plurality of lubrication points would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teaching of Hyvönen that such an arrangement improves overall bearing lives for rollers.

Applicants respectfully disagree with the above assertion for at least the following reasons. A combination of Hyvönen with Elkin would involve dismantling the Hyvönen system, which would render Hyvönen inoperable. Furthermore, there is no suggestion as to how the system for lubrication replacement disclosed by Elkin could be combined with the lubrication circulation system disclosed by Hyvönen. Nor is there any teaching or suggestion in Hyvönen that it would be desirable to configure a system to allow manual lubrication of the machine, or even how such a modification of Hyvönen could be accomplished. In Elkin, lubrication fluid in a crankcase of a vehicle engine is replaced, while in Hyvönen, lubrication is circulated through a series of pipes to a plurality of points of a machine. Therefore, because it is physically unclear as to how the lubrication replacement system of Elkin could be combined with the lubrication system of Hyvönen, one skilled in the art of manual lubrication would not be motivated to combine the systems, since the systems are configured to perform different functions.

There is no motivation provided in either Elkin or Hyvönen or the level of skill in that art of manual lubrication to suggest combination. As previously noted, Elkin discloses replacement of fluid at a single point while Hyvönen discloses a lubrication circulation system for a machine. Neither Elkin nor Hyvönen suggest it would be desirable to combine a fluid replacement system (Elkin) with a fluid circulation system (Hyvönen), and one skilled in the art of manual

lubrication would not be motivated to combine a system configured to replace fluid at a single point with a system including a plurality of pipes to circulate fluid through a system.

Further, Elkin fails to disclose or suggest a lubrication identification device arranged at the lubrication nozzle. Instead, Elkin discloses a barcode reader or keyboard for inputting the vehicle identification information, each of which is connected to a computer.<sup>30</sup> Such reader or keyboard is arranged separate from the delivery nozzle for the fluid. Therefore, Elkin fails to disclose or suggest a lubrication point identification device arranged at a lubrication nozzle as recited in claims 1, 6 and 10.

Nor does Elkin disclose identification of the lubrication point during the lubrication, as recited by claims 1, 6 and 10. In Elkin, a vehicle to be serviced is selected by inputting the vehicle identification information.<sup>31</sup> After the vehicle is selected using the vehicle identification information, additional choices are made from the service menu and service can then be performed. Therefore, Elkin fails to teach or suggest lubrication points with an identification element, based upon which information on the quantity of lubrication that is to be administered to each individual lubrication point in each instance of lubrication is retrievable from a memory as recited by claims 1, 6 and 10.

With regard to Hyvönen, Hyvönen distinguishes its automated lubrication system from prior art manual lubrication systems and teaches away from such manual lubrication systems. Hyvönen distinguishes prior art manual lubrication systems as follows:

As known from the prior art, the oil quantities of each lubrication point are determined and sent manually to be substantially invariable. It is an important disadvantage of such prior art systems that if a change in the operation values of the paper machine requires changes in the oil quantities at the lubrication points,

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<sup>30</sup> See, i.e. Elkin, col. 20, ll. 30-40

<sup>31</sup> See, i.e. Elkin, FIG. 24, col. 20, ll. 17-21

these changes must be carried out by means of manual regulation separately from the flow meter panels of each lubrication point.<sup>32</sup>

As such, neither Elkin nor Hyvönen teach or suggest how the system for lubrication replacement taught by Elkin could be combined with the lubrication circulation system disclosed by Hyvönen. In Elkin, lubrication fluid in a crankcase of a vehicle engine is replaced. While in Hyvönen, lubrication is circulated through a series of pipes to a plurality of points of a machine. Therefore, because it is physically unclear as to how the lubrication replacement system of Elkin could be combined with the lubrication system of Hyvönen, one skilled in the art of manual lubrication would not be motivated to combine the systems of Elkin and Hyvönen since the systems are configured to perform different functions.

In addition, there is no motivation provided in either reference (Elkin or Hyvönen) or the level of skill in the art of manual lubrication to suggest the combination. Elkin discloses replacement of fluid at a single point, while Hyvönen discloses a lubrication circulation system for a machine. Neither Elkin nor Hyvönen suggest that it would be desirable to combine a fluid replacement system (Elkin) with a fluid circulation system (Hyvönen), and one skilled in the art of manual lubrication would not be motivated to combine a system configured to replace fluid at a single point with a complex system including a plurality of pipes to circulate fluid through a system.

With regard to Pollock, Pollock simply regulates an amount of gasoline provided to an automobile. Therefore, one skilled in the art of manual lubrication would not look to the system disclosed by Pollock for solving problems associated with the art of manual lubrication. In addition, the problem solved by Pollock, i.e. controlling and accounting for gasoline dispensed into an automobile tank, is not pertinent to the problems addressed in the present application.

Further, Pollock discloses only a single fuel filling point and an automotive information module at an automobile. Therefore, Pollock fails to disclose a plurality of lubrication points, or

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<sup>32</sup> See, i.e. Hyvönen, col. 1, ll. 38-45

that the lubrication points are provided with an identification element as recited by claims 1, 6 and 10.

There is no motivation provided in Elkin, Hyvönen or Pollock, or the level of skill in the art of manual lubrication, to suggest the combination of references. As noted above, Elkin discloses replacement of fluid from a crankcase of an automobile and Pollock discloses control of gasoline dispensed into a gas tank of an automobile. In contrast, Hyvönen discloses a lubrication circulation system for a paper machine. None of the references suggest that it would be desirable to combine a fluid replacement system or gas regulation system for an automobile (Elkin and Pollock) with a fluid circulation system (Hyvönen), and one skilled in the art of manual lubrication would not be motivated to combine systems configured to replace fluid in a crankcase or a gas tank of an automobile with a system including a plurality of pipes to circulate fluid through a system. Neither Elkin, Hyvönen nor Pollock, alone or in combination, teach or suggest the features recited in independent claims 1, 6 and 10. Nor do they teach or suggest such systems could be modified to arrive at the claimed invention. Nor do they teach or suggest all the claim limitations.

Applicants believe claims 1, 6 and 10 are patentably distinguishable over the combination of Elkin, Hyvönen and Pollock. Therefore, independent claims 1, 6 and 10 are patentable over the proposed combination of Elkin, Hyvönen and Pollock and are in condition for allowance.

Additionally, for at least the same reasons discussed above for independent claims 1, 6 and 10, applicants believe dependent claims 2-5 and 7-9 are also in condition for allowance.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested.

App. No. 10/009,165  
Group Art Unit 3682

**SUMMARY**

Appellants' claims 1, 2, 4-7, 9 and 10 are patentable over Totaro, Hyvönen and Shida. Appellants' claim 3 depends from independent claim 1 and is therefore patentable over Totaro, Hyvönen, Shida and Elkin. Appellants' claim 8 depends from independent 6 and is therefore patentable over Totaro, Hyvönen, Shida and Pollock. Appellants' claims 1-10 are also patentable over the combination of Elkin, Hyvönen and Pollock. It is earnestly requested that the Examiner's rejection be reversed, and that all of the pending claims be allowed.

Please charge any additional fees or credit overpayment to Merchant & Gould Deposit Account No. 13-2725.

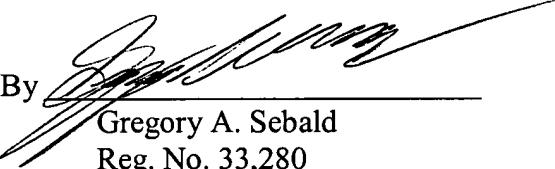
Respectfully submitted,

MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Dated:

7/5/05

By

  
Gregory A. Sebald  
Reg. No. 33,280

GAS:smm

**CLAIMS APPENDIX**

1. A system for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point,

wherein the lubrication points of the apparatus are provided with an identification element, based upon which information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication is retrievable from a fixed computer memory,

wherein the lubricant is delivered by a lubricant gun having a lubrication nozzle adapted for contacting a single lubrication point at a time, and

wherein, in the lubrication of a lubrication point of the apparatus, the identification element associated with the lubrication point is detected by a lubrication point identification device arranged at the lubrication nozzle and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the fixed computer memory,

following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out is stored in the fixed computer memory.

2. System according to claim 1, wherein, in connection with a planned lubrication round, information on the quantities of lubricant for each individual lubrication point stored in the fixed computer memory is transmitted from the fixed computer memory to a second, mobile memory and that, after carrying out the lubrication round, the information is transmitted from the mobile memory to the fixed computer memory.

3. System according to claim 1, wherein, on identification of an individual lubrication point, the quantity of lubricant is shown that is to be administered to the lubrication point in question and that, when the quantity has been administered, the administration is shown and/or indicated by audible means.

4. System according to claim 1, wherein a list of lubrication points visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the fixed computer memory.

5. System according to claim 1, wherein the time for a subsequent lubrication round and information on the quantity of lubricant for the individual lubrication points is calculated from information stored in the memory.

6. A device for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the device comprises:

an identification element unique to the lubrication point at each lubrication point of the apparatus,

a lubricant gun with a lubricant reservoir, which is connected by way of a pump device and a measuring device with indicating element to a nozzle adapted for contacting a single lubrication point at a time, and

a control element connected to the measuring device and the pump device, connected to which control element is a mobile memory containing stored data on the lubrication requirement of each individual lubrication point of the apparatus, with which mobile memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points,

and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element, together with means for storing in the mobile memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.

7. Device according to claim 6, wherein the device comprises communications equipment designed to achieve communication between the control element and a fixed computer.

8. Device according to claim 7, wherein the communications equipment is radio communications equipment.

9. Device according to claim 7, wherein the control element comprises mobile memory elements designed to store the data and information for a time interval between a beginning and end of one lubrication round and wherein the mobile memory elements are designed to communicate with the fixed computer memory.

10. A lubricant gun for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, the lubricant gun comprising:

a lubrication nozzle adapted for contacting a single lubrication point at a time, that is adapted to be connected, by way of a pump device, to a lubricant reservoir;

a measuring device adapted for measuring an amount of fed lubricant;

a control element connected to the measuring device and the pump device;

a mobile memory connected to the control element and containing stored data on a lubrication requirement of each individual lubrication point of the apparatus; and

a lubrication point identification device arranged in connection with the nozzle and adapted, when the nozzle is connected to one of the plurality of lubrication points, to automatically identify the lubrication point and associated lubrication requirement using an identification element unique to the lubrication point;

wherein the mobile memory communicates to the control element a lubricant quantity specification for each one of the plurality of lubrication points, and feeding information stored in

App. No. 10/009,165  
Group Art Unit 3682

the control element on the lubrication carried out at each one of the plurality of lubrication points is stored in the mobile.



pp. No. 10/009,165  
Group Art Unit 3682

## EVIDENCE APPENDIX

### **A. OFFICE ACTIONS AND AMENDMENTS/RESPONSES**

1. Advisory Action -- mailed December 3, 2004
2. Amendment and Response -- filed November 2, 2004
3. Final Office Action -- mailed August 2, 2004
4. Amendment -- filed May 24, 2004
5. Office Action -- mailed January 22, 2004
6. Amendment -- filed November 18, 2003
7. Advisory Action -- mailed October 1, 2003
8. Response -- filed September 17, 2003
9. Final Office Action -- mailed June 18, 2003
10. Supplemental Amendment -- filed May 21, 2003
11. Amendment -- filed April 16, 2003
12. Office Action -- mailed January 16, 2003
13. Preliminary Amendment -- filed November 7, 2001

### **B. REFERENCES RELIED UPON BY THE EXAMINER**

1. U.S. Patent No. 5,813,496
2. U.S. Patent No. 5,923,572
3. U.S. Patent No. 6,068,164

App. No. 10/009,165  
Group Art Unit 3682

4. U.S. Patent No. 6,123,174
5. Japanese Patent No. 5-170298

**C. REFERENCES CITED BY APPELLANTS**

1. Nica, A: Theory and Practice of Lubrication Systems, Publishing House of the Rumanian Academy, Bucharest, 1969, pages 73-77.

**D. CASES CITED IN THE BRIEF**

None.

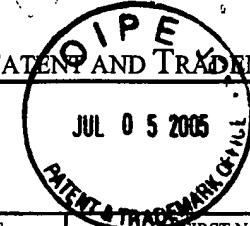
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Group Art Unit 3682

**RELATED PROCEEDINGS APPENDIX**

None



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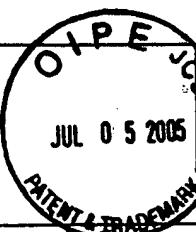
| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.    |
|--|-------------|----------------------|---------------------|---------------------|
| 10/009,165   | 11/07/2001  | Paer-Olof Funck      | 11709.46USWO        | 8653                |
| 23552  | 7590        | 12/03/2004           | J JG                |                     |
| MERCHANT & GOULD PC<br>P.O. BOX 2903<br>MINNEAPOLIS, MN 55402-0903 |             |                      | EXAMINER            | VAN PELT, BRADLEY J |
|  |             | ART UNIT             | PAPER NUMBER        |                     |
|  |             | 3682                 |                     |                     |

DATE MAILED: 12/03/2004

FR 6 WO: Feb 02, 2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PROLAW

**Advisory Action**

Application No.

09/009,165

**Applicant(s)**

FUNCK ET AL.

Examiner

Bradley J Van Pelt

Art Unit

3682

*--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

THE REPLY FILED 02 November 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

a)  The period for reply expires 3 months from the mailing date of the final rejection.

b)  The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

**ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).**

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1.  A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2.  The proposed amendment(s) will not be entered because:

- (a)  they raise new issues that would require further consideration and/or search (see NOTE below);
- (b)  they raise the issue of new matter (see Note below);
- (c)  they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d)  they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_.

3.  Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.

4.  Newly proposed or amended claim(s) \_\_\_\_\_. would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5.  The a) affidavit, b) exhibit, or c) request for reconsideration has been considered but does NOT place the application in condition for allowance because: \_\_\_\_\_.

6.  The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7.  For purposes of Appeal, the proposed amendment(s) a) will not be entered or b) will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

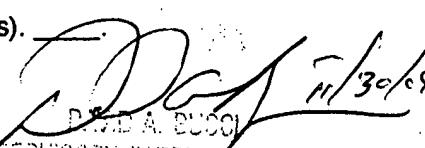
Claim(s) rejected: 1-10 (per final rejection). 

Claim(s) withdrawn from consideration: \_\_\_\_\_.

8.  The drawing correction filed on \_\_\_\_\_. is a) approved or b) disapproved by the Examiner.

9.  Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s).

10.  Other: \_\_\_\_\_.

  
 DAVID A. BUCCI  
 SUPERVISORY PATENT EXAMINER  
 11/30/04  
 100-0650

O I P E S/N 10/009,165

PATENT

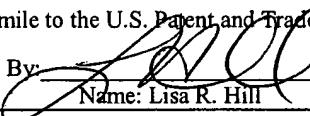
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: FUNCK et al. Examiner: Bradley J. Van Pelt  
Serial No.: 10/009,165 Group Art Unit: 3682  
Filed: November 7, 2001 Docket No.: 11709.46USWO  
Title: METHOD IN AND DEVICE FOR THE MANUAL LUBRICATION OF A  
PLURALITY OF LUBRICATION POINTS

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**CERTIFICATE UNDER 37 CFR 1.6(d):**

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on November 7, 2004.

By:   
Name: Lisa R. Hill

Mail Stop Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT AND RESPONSE**

Dear Sir:

In response to the Office Action mailed August 2, 2004, please amend the above-identified application as follows:

**Amendments to the Claims** begin on page 2 of this paper.

**Remarks** begin on page 6 of this paper.

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listing of claims in the application.

Claims 1, 2, 4, 6, 9, and 10 are amended.

**Listing of Claims:**

1. (Currently Amended) A system for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein

the lubrication points of the apparatus are provided with an identification element, based upon which information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication is retrievable from a fixed computer memory, wherein

the lubricant is delivered by a lubricant gun having a lubrication nozzle adapted for contacting a single lubrication point at a time, and wherein,

in the lubrication of a lubrication point of the apparatus, the identification element associated with the lubrication point is detected by a lubrication point identification device arranged at the lubrication nozzle and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the fixed computer memory,

following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out is stored in the fixed computer memory.

2. (Currently Amended) System according to claim 1, wherein, in connection with a planned lubrication round, information on the quantities of lubricant for each individual lubrication point stored in the aforementioned fixed computer memory is fed transmitted from that the fixed computer memory to a second, mobile memory and that, after carrying out the lubrication round, the information is transmitted from the second mobile memory to the aforementioned fixed computer memory.

3. (Previously Presented) System according to claim 1, wherein, on identification of an individual lubrication point, the quantity of lubricant is shown that is to be administered to the lubrication point in question and that, when the quantity has been administered, the administration is shown and/or indicated by audible means.
4. (Currently Amended) System according to claim 1, wherein a list of lubrication points visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the fixed computer memory.
5. (Previously Presented) System according to claim 1, wherein the time for a subsequent lubrication round and information on the quantity of lubricant for the individual lubrication points is calculated from information stored in the memory.
6. (Currently Amended) A device for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the device comprises:
  - an identification element unique to the lubrication point at each lubrication point of the apparatus,
  - a lubricant gun with a lubricant reservoir, which is connected by way of a pump device and a measuring device with indicating element to a nozzle adapted for contacting a single lubrication point at a time, and
  - a control element connected to the measuring device and the pump device, connected to which control element is a mobile memory containing stored data on the lubrication requirement of each individual lubrication point of the apparatus, with which mobile memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points,
  - and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the

lubrication point in question and its lubrication requirement by means of the identification element, together with means for storing in the mobile memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.

7. (Previously Presented) Device according to claim 6, wherein the device comprises communications equipment designed to achieve communication between the control element and a fixed computer.
8. (Previously Presented) Device according to claim 7, wherein the communications equipment is radio communications equipment.
9. (Currently Amended) Device according to claim 7, wherein the control element comprises mobile memory elements designed to store the data and information for a time interval between a beginning and end of one lubrication round and wherein the mobile memory elements are designed to communicate with the fixed computer memory.
10. (Currently Amended) A lubricant gun for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, the lubricant gun comprising:
  - a lubrication nozzle adapted for contacting a single lubrication point at a time, that is adapted to be connected, by way of a pump device, to a lubricant reservoir;
  - a measuring device adapted for measuring an amount of fed lubricant;
  - a control element connected to the measuring device and the pump device;
  - a mobile memory connected to the control element and containing stored data on a lubrication requirement of each individual lubrication point of the apparatus; and
  - a lubrication point identification device arranged in connection with the nozzle and adapted, when the nozzle is connected to one of the plurality of lubrication points, to automatically identify the lubrication point and associated lubrication requirement using an identification element unique to the lubrication point;

wherein the mobile memory communicates to the control element a lubricant quantity specification for each one of the plurality of lubrication points, and feeding information stored in the control element on the lubrication carried out at each one of the plurality of lubrication points; ~~and wherein is stored in the mobile memory stores data on a quantity of lubricant administered to each one of the plurality of lubrication points.~~

**REMARKS**

Favorable reconsideration of this application is requested in view of the above amendments and the following remarks. Claims 1, 2, 4, 6, 9, and 10 are hereby amended. No new matter has been added. Support for the amendment to claims 1, 6, and 10, specifying that the nozzle is "adapted for contacting a single lubrication point at a time", is found in the drawings. Support for the amendments to claims 1, 2, 4, 6, 9, and 10, clarifying whether memory is that of the fixed computer or that of the mobile memory, can be found in both original claim 2 and the specification, page 2, lines 11-12.

Claims 1, 2, 4-7, 9, and 10 were rejected as being unpatentable over Totaro in view of Hyvonen and Shida. Applicant's traverse this rejection to the extent that it is maintained. Totaro teaches only a hand grease gun that is manually controlled. Totaro teaches away from the connection to auxiliary equipment (see column 5, lines 18-24).

Hyvonen teaches an automated system for monitoring and controlling the circulation of oil. In the system according to Hyvonen, oil is fed from a storage facility (also designated as lubrication center) 30a-b, through pipes 32, ... to the respective lubrication point. From the lubrication point, the oil returns through a return pipe 37... and back to the lubrication center (see column 5, lines 39-50). No manual lubrication is performed. Hyvonen teaches that the problem of prior art systems is that the circulation lubrication had to be manually regulated by means of flow meters at each lubrication point (see column 1, lines 38-53). Hyvonen teaches away from any manual regulation of the flow of lubricant at the lubricant point.

A combination of Hyvonen with Totaro would involve dismantling the Hyvonen system, which would render it inoperable, since there could be no automatic lubricant supply and return from the lubrication points.

Shida teaches only the identification and data retrieval elements. The barcode scanner (12) reads a bar code (13) attached in the vicinity of the oil feeding port (10). This code is

transmitted to the computer/register in the gas station where the identification of the vehicle, including car number, customer code, and oil volume can be determined. The data read could not provide a specific fill volume, as Shida does not suggest to identify the current oil level in the tank. (It may not be empty.)

Further, Shida does not suggest that post event data is communicated via a transmitting means to the computer/register in the gas station. Shida teaches only identification of the vehicle in order to improve efficiency. In contrast, claim 2 recites that following the administration of lubrication to the lubrication point, information on the lubrication carried out is stored in mobile memory and then is transmitted to the memory of the computer.

Even further, Shida does not teach a bi-directional communication between the nozzle and the computer/register. Shida "sends the customer information to a superior device through a transmitting means". By definition, a transmitting device can only send data, not receive data. The claimed invention recites bi-direction communication between the fixed computer (12) and the mobile memory of the control element (8) of the nozzle (6). Claim 2 recites that data, on the quantities of lubricant for each individual lubrication point, is received by the mobile memory at the nozzle control device from the fixed computer memory. After performing the required lubrication, data pertaining to the amounts and locations of lubrication is transmitted from the mobile memory at the nozzle control device to the memory of the fixed computer.

It is not possible to combine Hyvonen, Totaro, and Shida and arrive at the claimed invention where data is both received at and sent from the communications equipment located at the independently operated, manual lubrication device.

Favorable reconsideration is requested.

Claim 3 was rejected as being unpatentable over Totaro in view of Hyvonen and Shida, and further in view of Elkin. Elkin does not teach an identification device at the lubrication point, unless the entire car is considered a lubrication point.

Furthermore, Elkin teaches a method of "automatically extracting fluids" (see the Abstract). The claimed invention is for a manual lubrication system. An automatic lubrication means entirely removing reliance on the operator and to provide continuous lubricant control. For automatic lubrication, pipe installations to the lubrication points are necessary. In contrast, manual lubrication, as is claimed, implies that the system relies on an operator for its successful operation. Support for the interpretation of manual versus automatic lubrication can be found in the enclosed excerpt from Nica, A: Theory and Practice of Lubrication Systems, Publishing House of the Rumanian Academy, Bucharest, 1969, pages 73-77. Based on these remarks and dependence from claim 1, please reconsider claim 3 allowable.

Favorable reconsideration is requested.

Claim 8 was rejected as being unpatentable over Totaro in view of Hyvonen and Shida, and further in view of Pollack. Claim 8 depends from claim 6, which has been addressed above. Please reconsider claim 8 allowable.

Claims 1-10 were rejected as being unpatentable over Elkin in view of Hyvonen in view of Pollack. The Examiner noted that Elkin teaches a manual lubrication point. The applicant traverses these rejections. Elkin teaches an automatic system as stated in the Abstract. The claimed invention recites a manual lubrication system. According to the enclosed reference by Nica, a manual system relies on an operator for its successful operation. The claimed lubrication gun is designed for being hand-held. The invention similarly can not be considered semiautomatic as it is not dependent on any action of the machinery that is to be lubricated. Based upon dependence from independent claims 1, 6, and 10, and the remarks above, please reconsider claims 1-10 allowable.

U.S. Patent Application Serial No. 10/009,165  
Reply to Office Action Dated: August 2, 2004

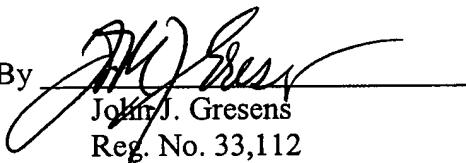
In view of the above, favorable reconsideration in the form of a notice of allowance is requested.  
Any questions regarding this communication can be directed to the undersigned attorney, John J.  
Gresens, Reg. No. 33,112, at (612)371-5265.



Respectfully submitted,

MERCHANT & GOULD P.C.

P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

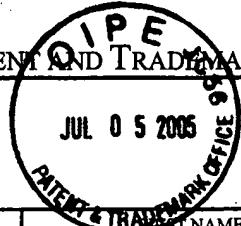
By   
John J. Gresens  
Reg. No. 33,112

Dated: November 2, 2004

JJG:mfe



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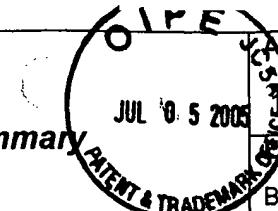
| APPLICATION NO.  | FILING DATE | NAME OF NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|------------------------|---------------------|------------------|
| 10/009,165   | 11/07/2001  | Paer-Olof Funck        | 11709.46USWO✓       | 8653             |
| 23552  | 7590        | 08/02/2004             | EXAMINER            |                  |
| MERCHANT & GOULD PC<br>P.O. BOX 2903<br>MINNEAPOLIS, MN 55402-0903 |             |                        | VAN PELT, BRADLEY J |                  |
| JG   |             | ART UNIT               |                     | PAPER NUMBER     |
|  |             | 3682                   |                     |                  |

DATE MAILED: 08/02/2004

FR 2 Month: October 2, 2004  
FR 3/PTA: November, 2, 2004  
FR 6 Month: February 2, 2005

Please find below and/or attached an Office communication concerning this application or proceeding.

DD✓

**Office Action Summary**

Application No.

10/009,165

Examiner

Bradley J Van Pelt

Applicant(s)

FUNCK ET AL.

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 24 May 2004.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

**DETAILED ACTION*****Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4-7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Totaro (USPN 6,068,164) in view of Hyvonen et al. (USPN 5,813,496) and Shida (JP 5-170298).

Totaro discloses a system for manual lubrication of an apparatus wherein the lubricant is delivered by a lubricant gun (1) having a lubrication nozzle (8).

Totaro fails to show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the lubrication points of the apparatus are provided with an identification element, based upon which information on the quantity of lubricant that is to be administered to each individual point in each instance of lubrication is retrievable from a memory, and wherein, in the lubrication of a lubrication point of the apparatus the identification element associated with the lubrication point is detected by a lubrication point identification device arranged at the lubrication nozzle and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory, following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out is stored in the memory;

information on quantities of lubricant for each point stored in the aforementioned memory is fed from that memory to a second mobile member and that after carrying out the lubrication round the information is transmitted from the second memory to the aforementioned memory;

list is retrieved from memory;

time from round is calculated from information stored in the memory;  
measuring device, control element, lubrication identification device.

Hyvonen et al. show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

Shida shows an identification element (13), based upon which information on the quantity of fluid that is to be administered to each individual point in each instance of filling is retrievable from a memory, and wherein, in the filling of a point of the apparatus the identification element associated with the point is detected by a point identification device (12) arranged at the nozzle and information on the predetermined quantity of fluid for the point identified is retrieved from the memory, and information on the filling carried out is stored in the memory;

information on quantities for each point stored in the aforementioned memory is fed from that memory to a second mobile member and that after carrying out the round the information is transmitted from the second memory to the aforementioned memory;

list is retrieved from memory;

time from round is calculated from information stored in the memory;

measuring device, control element, lubrication identification device (all inherent features of Shida).

To modify the apparatus of Totaro so as to provide an apparatus with a plurality of lubrication points would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teachings of Hyvonen et al. that such an arrangement improves functionality of the system.

To modify the apparatus of Totaro so as to provide and scanning and storage device would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teachings of Shida that such an arrangement improves monitoring amounts used.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totaro (USPN 6,068,164) in view of Hyvonen et al. (USPN 5,813,496) and Shida (JP 5-170298) as applied to claims 1, 2, 4-7, 9, and 10 above, and further in view of Elkin et al. (USPN 6,123,174).

The above reference combination shows all of the instantly claimed invention except an indication by audible means.

Elkin et al. disclose that on identification of an individual lubrication point the quantity of lubricant is shown that is to be administered (column 25, lines 12-17) to the lubricant point in question and that when the quantity has been administered the administration is shown and/or indicated by audible means (column 25, lines 24-27).

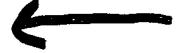
To modify the above reference combination so as to provide and audible means would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teachings of Elkin et al. that such an arrangement will indicate to user when operation is finished.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totaro (USPN 6,068,164) in view of Hyvonen et al. (USPN 5,813,496) and Shida (JP 5-170298) as applied to claims 1, 2, 4-7, 9 and 10 above, and further in view of Pollack (USPN 5,923,572).

The above reference combination shows all of the instantly claimed invention except communication by radio equipment.

Pollack shows communications equipment composed of radio communications equipment (38, 39, 71, 72).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the above reference combination with the radio communication, as taught by Pollack, for the purpose of a wireless transmission and getting rid of hardware.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elkin et al. (USPN 6,123,174) in view of Hyvonen et al. (USPN 5,813,496) in view of Pollack. 

Elkin et al. disclose a system for manual lubrication of a lubrication point with a quantity of lubricant individually predetermined for the lubrication point, wherein the lubrication point is provided with an individual identification information (column 16, lines 8-13) on the quantity (column 16, line 15) of lubricant that is to be administered to the lubrication point in each instance of lubrication is stored in a memory/measuring device and control element (column 16, lines 13-16), and wherein in the lubrication of a lubrication point the identification of the point is detected (bar code reader 216 see column 20, lines 30-40) and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory (column 20 lines 25-29), following which the said quantity of lubricant is administered to the lubrication

point, information on the lubrication carried out and the time thereof is stored in the memory (column 26, lines 41-45).

Elkin et al. disclose that on identification of an individual lubrication point the quantity of lubricant is shown that is to be administered (column 25, lines 12-17) to the lubricant point in question and that when the quantity has been administered the administration is shown and/or indicated by audible means (column 25, lines 24-27).

Elkin et al. disclose that a list of lubrication points (engines and vehicles) visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory (column 26 lines 42-47).

Elkin et al. inherently disclose in that the time for a subsequent lubrication round information on the quantity of lubrication for the individual lubrication point is calculated from information stored in the memory. Elkin et al. disclose (column 16, lines 11-16) the database tracks which services have been preformed, thus it is calculated either by computer or user when next operation is due.

Re: claim 6, Elkin et al. disclose a device for manual lubrication of a lubrication point with a quantity of lubricant individually predetermined for each lubrication point, characterized in that the device comprises a combination of: an identification element unique to the lubrication point (bar code, see column 16, line 56) unique to the lubrication point at a lubrication point (engine in Elkin) and a measuring device (78), a reservoir (24) which is connected by way of a pump device (76) and a measuring device (78) with indicating element (96) and a dispensing apparatus (166);

Elkin et al. fail to show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

Elkin et al. fail to show in connection with a planned lubrication round information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory is fed from that memory to a second mobile memory and that after carrying out the lubrication round the said information is transmitted from the second memory to the aforementioned memory.

Elkin et al. do not disclose a lubricant gun with a lubricant reservoir which is connected by way of a pump device and the pump device connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point, with which memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points, and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation;

the device comprises communication equipment designed to achieve communication between the control element and a fixed computer;

communications equipment composed of radio communications equipment;

the control element comprises memory elements designed to store the data and information for a time interval between the beginning and end of one operation round and that the memory elements are designed to communicate with the computer memory.

Re: claims 1 and 6, Hyvonen et al. renders obvious an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

Re: claim 2, Pollock (USPN 5,923,572) renders obvious a memory (56) being fed from that memory to a second mobile memory (30 mounted on hose is mobile) and that after carrying out an operation the information is transmitted from the second memory to the aforementioned memory (column 3, lines 60-65).

Pollock renders obvious a gun (12) with a reservoir (inherent) which is connected by way of a pump device (45) and a measuring device (44) to a nozzle (end portion of dispenser), a control element (24) connected to the measuring device and the pump device connected to which control element is a memory containing stored data (30) of an individual point, with which memory the gun is designed to communicate for transfer to the control element of a quantity specification (column 4, lines 4-17) for a lubrication point and for feeding information stored in the control element on the operation carried out at the individual point (also column 4, lines 4-17), and a point identification device (21) arranged in connection with the nozzle and designed, when the nozzle is connected to a point, to automatically identify the point in question and its requirement by means of the identification element together with means for storing in the memory data on the quantity administered to the point in question in each operation (column 3, lines 65-67, column 4, lines 1-3);

Re: claim 7, Pollack renders obvious the device comprises communication equipment designed to achieve communication between the control element and a fixed computer.

Re: claim 8, Pollack renders obvious communications equipment composed of radio communications equipment (38, 39, 71, 72).

Re: claim 9, Pollock renders obvious that the control element (24) comprises memory elements (84) designed to store the said data and information for a time interval between the beginning and end of one operation round and that the memory elements are designed to communicate with the computer memory (30).

To modify the apparatus of Elkin et al. so as to include an apparatus with a plurality of lubrication points with a quantity of lubricant individually determined for each lubrication point would have been obvious to one of ordinary skill in the art in view of the teachings of Hyvonen et al. that such an arrangement improves overall bearing lives for rollers.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the dispensing apparatus of Elkin et al. with the gun dispenser, and the control element to communicate with an identification point, as taught by Pollack, for the purpose of eliminating need for operator input, which reduces the labor cost.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the communications apparatus of Elkin et al. with the radio communication, as taught by Pollack, for the purpose of a wireless transmission, which decreases the overall response time.

It would have been obvious to one of ordinary skill in the art at the time, of the invention to modify the apparatus of Elkin et al. to utilize memory storage and communication, as taught

Art Unit: 3682

by Pollack, for the purpose of tracking the quantity dispensed of the lubrication apparatus to accurately calculate total sales, further maximizing profits.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the memory transmitting device of Elton et al. by adding a second mobile memory, as taught by Pollock, for the purpose of eliminating need for operator input, which reduces the labor cost.

*Response to Arguments*

6. Applicant's arguments filed May 24, 2004 have been fully considered but they are not persuasive.

The applicant argues that Hyvonen teaches away from the instant invention, because the reference mentions there are disadvantages to manual lubrication. Hyvonen does not teach away from the instant invention, because the instant invention is technically not a manual device. The instant invention is an automated device. If the applicant distinguishes the instant invention as being a manual operation, then anything that requires any operator input would be considered manual. Clearly this is not the case and Hyvonen does not teach away from the instant invention.

The applicant then argues that Totaro teaches away from devices that require "auxiliary equipment." It is submitted that one of ordinary skill in the art would look to Totaro for the general teaching of a lubricant nozzle and the reference does not teach away from the instant invention.

The applicant argues that since Shida is directed to an automobile gasoline pump there would be no motivation to combine the reference with either of the lubrication systems disclosed

Art Unit: 3682

by Totaro and Hyvonon. All of the prior art and the instant invention are drawn to fluid distribution and one having ordinary skill in the art would look to the teachings of Shida to implement a lubrication tracking distribution system.

*Conclusion*

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

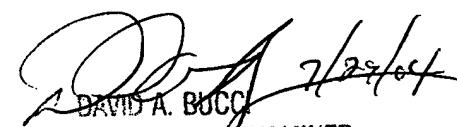
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley J Van Pelt whose telephone number is 703.305.8176. The examiner can normally be reached on M-Th 7:00-4:30, 2nd F 7:00-3:30.

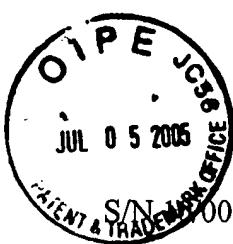
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on 703.308.3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3682

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BJVP

  
DAVID A. BUCCO  
SUPERVISOR, PATENT EXAMINER  
TECHNICAL 3600



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Funck et al. Examiner: Bradley J. Van Pelt  
Serial No.: 10/009,165 Group Art Unit: 3682  
Filed: November 7, 2001 Docket No.: 11709.46USWO  
Cust. No.: 23552 Confirmation No.: 8653  
Title: Method in and Device for the Manual Lubrication of a Plurality of Lubrication Points

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CERTIFICATE UNDER 37 CFR 1.6(d):

The undersigned hereby certifies that this correspondence is being transmitted via facsimile to: Mail Stop Amendment, Commissioner for Patents, Attention: Examiner Bradley J. Van Pelt, P.O. 1450, Alexandria, VA 22313-1450 on May 24, 2004.

By: *Patricia L. Larrimore*  
Name:

AMENDMENT

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the non-final Office Action mailed on January 22, 2004, please consider and enter the following amendments and remarks. Claims 1-10 remain pending in the application.

Amendments to the claims begin at page 2 of this paper.

Remarks begin at page 5 of this paper.

### In the Claims

The following listing of the claims replaces all previous listings of the claims.

1. (Previously Presented) A system for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the lubrication points of the apparatus are provided with an identification element, based upon which information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication is retrievable from a memory, wherein the lubricant is delivered by a lubricant gun having a lubrication nozzle, and wherein, in the lubrication of a lubrication point of the apparatus, the identification element associated with the lubrication point is detected by a lubrication point identification device arranged at the lubrication nozzle and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory, following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out is stored in the memory.
2. (Previously Presented) System according to claim 1, wherein, in connection with a planned lubrication round, information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory is fed from that memory to a second, mobile memory and that, after carrying out the lubrication round, the information is transmitted from the second memory to the aforementioned memory.
3. (Previously Presented) System according to claim 1, wherein, on identification of an individual lubrication point, the quantity of lubricant is shown that is to be administered to the lubrication point in question and that, when the quantity has been administered, the administration is shown and/or indicated by audible means.
4. (Previously Presented) System according to claim 1, wherein a list of lubrication points visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory.

5. (Previously Presented) System according to claim 1, wherein the time for a subsequent lubrication round and information on the quantity of lubricant for the individual lubrication points is calculated from information stored in the memory.

6. (Previously Presented) A device for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the device comprises:

an identification element unique to the lubrication point at each lubrication point of the apparatus,

a lubricant gun with a lubricant reservoir, which is connected by way of a pump device and a measuring device with indicating element to a nozzle, and

a control element connected to the measuring device and the pump device, connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point of the apparatus, with which memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points, and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element, together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.

7. (Previously Presented) Device according to claim 6, wherein the device comprises communications equipment designed to achieve communication between the control element and a fixed computer.

8. (Previously Presented) Device according to claim 7, wherein the communications equipment is radio communications equipment.

9. (Previously Presented) Device according to claim 7, wherein the control element comprises memory elements designed to store the data and information for a time interval between a beginning and end of one lubrication round and wherein the memory elements are designed to communicate with the computer memory.

10. (New) A lubricant gun for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, the lubricant gun comprising:

    a lubrication nozzle that is adapted to be connected, by way of a pump device, to a lubricant reservoir;

    a measuring device adapted for measuring an amount of fed lubricant;

    a control element connected to the measuring device and the pump device;

    a memory connected to the control element and containing stored data on a lubrication requirement of each individual lubrication point of the apparatus; and

    a lubrication point identification device arranged in connection with the nozzle and adapted, when the nozzle is connected to one of the plurality of lubrication points, to automatically identify the lubrication point and associated lubrication requirement using an identification element unique to the lubrication point;

    wherein the memory communicates to the control element a lubricant quantity specification for each one of the plurality of lubrication points and feeding information stored in the control element on the lubrication carried out at each one of the plurality of lubrication points; and

    wherein the memory stores data on a quantity of lubricant administered to each one of the plurality of lubrication points.

**Remarks**

This is response to the non-final Office Action mailed on January 22, 2004. Claim 10 has been added and is fully supported by the specification. No new matter has been added. Claims 1-10 remain pending in the application. Reconsideration and allowance are respectfully requested in view of the following remarks.

**I. Preliminary Note Regarding Listing of Reference on Notice of References Cited**

One of the references cited in the Office Action, Shida, Japanese Ref. No. 5-170298, does not appear to be listed on any Notice of References Cited. Listing of this reference on a Notice of References Cited is respectfully requested so that the record will reflect consideration of this reference.

**II. Interview Summary**

Preliminarily, Applicants wish to thank the Examiner for the courtesy extended to Applicants' representative, Robert A. Kalinsky, during the interview on May 19, 2004. During the interview, claim 1 and proposed claim 10 were discussed, as well as the Totaro, Hyvönen, and Shida references. Agreement regarding allowance of the claims was not reached because the Examiner indicated that final approval was needed from his supervisor. The amendments and remarks contained herein are consistent with the substance of the interview.

**III. Claim Rejections - 35 U.S.C. § 103**

Turning now to section 2 of the Office Action, claims 1, 2, 4-7, and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Totaro, U.S. Patent No. 6,068,164, in view of Hyvönen et al., U.S. Patent No. 5,813,496, and Shida, Japanese Ref. No. 5-170298. This rejection is respectfully traversed.

Claim 1 is directed to a system for manual lubrication of an apparatus having a plurality of lubrication points.

As noted in the previous response, Hyvönen discloses an automated system for monitoring and controlling the circulation lubrication of the bearings of a paper machine. In Hyvönen, lubrication oil is automatically fed from an oil-lubrication center through a series of pipes to lubrication points and is fed back to the center through a system of return pipes.

Hyvönen distinguishes prior art manual lubrication systems as follows:

As known from the prior art, the oil quantities of each lubrication point are determined and set manually to be substantially invariable. It is an important disadvantage of such prior art systems that if a change in the operation values of the paper machine requires changes in the oil quantities at the lubrication points, these changes must be carried out by means of manual regulation separately from the flow meter panels of each lubrication point.

Hyvönen, col. 1, lines 38-45. Therefore, Hyvönen distinguishes its automated lubrication system from prior art manual lubrication systems and teaches away from such manual lubrication systems.

Hyvönen is combined with Totaro and Shida to reject claim 1. However, Totaro discloses a hand grease gun that is manually controlled. See Totaro, Figure 1. Shida discloses an automobile gasoline pump nozzle, which is also manually controlled by a user. See Shida, abstract. Therefore, it is respectfully suggested that one skilled in the art would not be motivated to combine Hyvönen with either Totaro or Shida because Hyvönen discloses an automated system and teaches away from manual systems, while both Totaro and Shida disclose manual systems.

In addition, Totaro describes a main advantage of its manual hand grease gun as the ability to use the device for an extended period of time without needing auxiliary equipment:

Accordingly, it is an object of the present invention to provide a hand grease gun device of the type known as a syringe grease gun wherein the pressure piston is not operated by a spring, rather by compressed air, which device may be used outdoors for an unlimited period of time (provided adequate grease supply is available) without needing any auxiliary equipment.

Totaro, col. 5, lines 18-24 (underlining added). In other words, Totaro discloses a manual, self-contained device and teaches away from devices that require "auxiliary equipment."

It is respectfully suggested that one skilled in the art would not be motivated to combine Totaro with either Hyvönen or Shida because Totaro teaches away from systems that require auxiliary equipment, while both Hyvönen and Shida require systems with auxiliary equipment. For example, Hyvönen discloses a system with a significant amount of piping and containment units. Shida discloses an automobile gasoline pump nozzle, which presumably requires at least a corresponding gasoline pump and large underground fuel container.

Further, Shida is directed to an automobile gasoline pump nozzle and fails to disclose or suggest a lubrication system. Therefore, it is respectfully suggested that one skilled in the art would not be motivated to combine the automobile gasoline pump nozzle disclosed by Shida with either of the lubrication systems disclosed by Totaro and Hyvönen.

For at least these reasons, reconsideration and allowance of claim 1, as well as claims 2, 4, and 5 that depend therefrom, are respectfully requested.

Claim 6 is directed to a device for manual lubrication of an apparatus having a plurality of lubrication points. Claim 6 is not identical in scope to claim 1, but is similar to claim 1 in that claim 6 is directed to manual lubrication. Therefore, for at least similar reasons to those noted above with respect to claim 1, claim 6, as well as claims 7 and 9 that depend therefrom, should be allowable. Reconsideration is respectfully requested.

In section 3, claim 3 was rejected was rejected under section 103(a) as being unpatentable over Totaro in view of Hyvönen and Shida and further in view of Elkin et al., U.S. Patent No. 6,123,174. In section 4, claim 8 was rejected under section 103(a) as being unpatentable over Totaro in view of Hyvönen and Shida and further in view of Pollock, U.S. Patent No. 5,923,572. These rejections are respectfully traversed, and the correctness of the rejections is not conceded.

However, claim 3 depends from claim 1, and claim 8 depends from claim 6. Neither Elkin nor Pollock remedy the shortcomings of the references noted above. Therefore, claims 3 and 8 should be allowable for at least the same reasons as claim 1 and 6, respectively.

Reconsideration and allowance are requested.

In section 5, claims 1-9 were rejected under section 103(a) as being unpatentable over Elkin in view of Hyvönen and Pollock. This rejection is respectfully traversed.

As noted in the previous response, Elkin discloses a manual system for extracting fluid from and injecting fluid into a reservoir in a vehicle. Pollock discloses a manual device for controlling, authorizing, and accounting for gasoline delivered to an automobile. Therefore, for at least similar reasons to those provided above, one skilled in the art would not be motivated to combine the automated lubrication system disclosed by Hyvönen with either of the manual systems disclosed by Elkin and Pollock.

For at least these reasons, reconsideration and allowance of claims 1-9 are respectfully requested.

**IV. New Claim 10**

Claim 10 is directed at a lubricant gun for manual lubrication of an apparatus having a plurality of lubrication points. Claim 10 includes limitations not disclosed or suggested by any of the cited references. For example, claim 10 recites that the lubricant gun includes a measuring device, a control element, and a lubrication point identification device arranged in connection with a lubrication nozzle. Consideration and allowance of claim 10 are respectfully requested.

**V. Conclusion**

The remarks set forth above provide certain arguments in support of the patentability of the pending claims. There may be other reasons that the pending claims are patentably distinct over the cited references, and the right to raise any such other reasons or arguments in the future is expressly reserved.

Favorable reconsideration in the form of a Notice of Allowance is respectfully requested. The Examiner is encouraged to contact the undersigned attorney with any questions regarding this application.

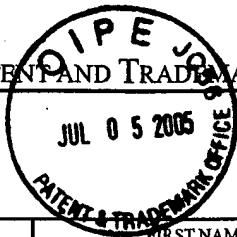
Respectfully submitted,  
MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Date: May 24, 2004

By:   
Name: John J. Gresens  
Reg. No.: 33,112  
JJG/RAK



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| 10/009,165   | 11/07/2001  | Paer-Olof Funck      | 11709.46USWO✓       | 8653             |
| 23552  | 7590        | 01/22/2004           | EXAMINER            |                  |
| MERCHANT & GOULD PC<br>P.O. BOX 2903<br>MINNEAPOLIS, MN 55402-0903 |             |                      | VAN PEEL, BRADLEY J |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 3682                |                  |

DATE MAILED: 01/22/2004

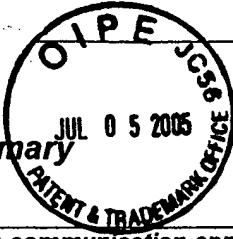
Resp. Stat. PTA: April 22, 2004

Response Stat: July 22, 2004

DU  
JW

Please find below and/or attached an Office communication concerning this application or proceeding.

PROLAW



## **Office Action Summary**

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

## **Disposition of Claims**

4)  Claim(s) 1-9 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-9 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

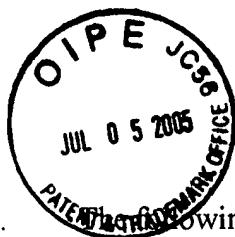
12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

13)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a)  The translation of the foreign language provisional application has been received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1)  Notice of References Cited (PTO-892) 4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948) 5)  Notice of Informal Patent Application (PTO-152)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6)  Other: \_\_\_\_\_



## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4-7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Totaro (USPN 6,068,164) in view of Hyvonen et al. (USPN 5,813,496) and Shida (JP 5-170298).

Totaro discloses a system for manual lubrication of an apparatus wherein the lubricant is delivered by a lubricant gun (1) having a lubrication nozzle (8).

Totaro fails to show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the lubrication points of the apparatus are provided with an identification element, based upon which information on the quantity of lubricant that is to be administered to each individual point in each instance of lubrication is retrievable from a memory, and wherein, in the lubrication of a lubrication point of the apparatus the identification element associated with the lubrication point is detected by a lubrication point identification device arranged at the lubrication nozzle and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory, following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out is stored in the memory;

information on quantities of lubricant for each point stored in the aforementioned memory is fed from that memory to a second mobile member and that after carrying out the

lubrication round the information is transmitted from the second memory to the aforementioned memory;

list is retrieved from memory;

time from round is calculated from information stored in the memory.

Hyvonen et al. show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

Shida shows an identification element (13), based upon which information on the quantity of fluid that is to be administered to each individual point in each instance of filling is retrievable from a memory, and wherein, in the filling of a point of the apparatus the identification element associated with the point is detected by a point identification device (12) arranged at the nozzle and information on the predetermined quantity of fluid for the point identified is retrieved from the memory, and information on the filling carried out is stored in the memory;

information on quantities for each point stored in the aforementioned memory is fed from that memory to a second mobile member and that after carrying out the round the information is transmitted from the second memory to the aforementioned memory;

list is retrieved from memory;

time from round is calculated from information stored in the memory.

To modify the apparatus of Totaro so as to provide an apparatus with a plurality of lubrication points would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teachings of Hyvonen et al. that such an arrangement improves functionality of the system.

To modify the apparatus of Totaro so as to provide and scanning and storage device would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teachings of Shida that such an arrangement improves monitoring amounts used.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totaro (USPN 6,068,164) in view of Hyvonen et al. (USPN 5,813,496) and Shida (JP 5-170298) as applied to claims 1, 2, 4-7, and 9 above, and further in view of Elkin et al. (USPN 6,123,174).

The above reference combination shows all of the instantly claimed invention except an indication by audible means.

Elkin et al. disclose that on identification of an individual lubrication point the quantity of lubricant is shown that is to be administered (column 25, lines 12-17) to the lubricant point in question and that when the quantity has been administered the administration is shown and/or indicated by audible means (column 25, lines 24-27).

To modify the above reference combination so as to provide and audible means would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teachings of Elkin et al. that such an arrangement will indicate to user when operation is finished.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totaro (USPN 6,068,164) in view of Hyvonen et al. (USPN 5,813,496) and Shida (JP 5-170298) as applied to claims 1, 2, 4-7, and 9 above, and further in view of Pollack (USPN 5,923,572).

The above reference combination shows all of the instantly claimed invention except communication by radio equipment.

Pollack shows communications equipment composed of radio communications equipment (38, 39, 71, 72).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the above reference combination with the radio communication, as taught by Pollack, for the purpose of a wireless transmission and getting rid of hardware.

5. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elkin et al. (USPN 6,123,174) in view of Hyvonen et al. (USPN 5,813,496) in view of Pollack.

Elkin et al. disclose a system for manual lubrication of a lubrication point with a quantity of lubricant individually predetermined for the lubrication point, wherein the lubrication point is provided with an individual identification information (column 16, lines 8-13) on the quantity (column 16, line 15) of lubricant that is to be administered to the lubrication point in each instance of lubrication is stored in a memory (column 16, lines 13-16), and wherein in the lubrication of a lubrication point the identification of the point is detected (bar code reader 216 see column 20, lines 30-40) and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory (column 20 lines 25-29), following which the said quantity of lubricant is administered to the lubrication point, information on the lubrication carried out and the time thereof is stored in the memory (column 26, lines 41-45).

Elkin et al. disclose that on identification of an individual lubrication point the quantity of lubricant is shown that is to be administered (column 25, lines 12-17) to the lubricant point in question and that when the quantity has been administered the administration is shown and/or indicated by audible means (column 25, lines 24-27).

Elkin et al. disclose that a list of lubrication points (engines and vehicles) visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory (column 26 lines 42-47).

Elkin et al. inherently disclose in that the time for a subsequent lubrication round information on the quantity of lubrication for the individual lubrication point is calculated from information stored in the memory. Elkin et al. disclose (column 16, lines 11-16) the database tracks which services have been preformed, thus it is calculated either by computer or user when next operation is due.

Re: claim 6, Elkin et al. disclose a device for manual lubrication of a lubrication point with a quantity of lubricant individually predetermined for each lubrication point, characterized in that the device comprises a combination of: an identification element unique to the lubrication point (bar code, see column 16, line 56) unique to the lubrication point at a lubrication point (engine in Elkin) and a measuring device (78), a reservoir (24) which is connected buy way of a pump device (76) and a measuring device (78) with indicating element (96) and a dispensing apparatus (166);

Elkin et al. fail to show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

Elkin et al. fail to show in connection with a planned lubrication round information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory is fed from that memory to a second mobile memory and that after carrying out the lubrication round the said information is transmitted from the second memory to the aforementioned memory.

Elkin et al. do not disclose a lubricant gun with a lubricant reservoir which is connected by way of a pump device and the pump device connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point, with which memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points, and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation;

the device comprises communication equipment designed to achieve communication between the control element and a fixed computer;

communications equipment composed of radio communications equipment;

the control element comprises memory elements designed to store the data and information for a time interval between the beginning and end of one operation round and that the memory elements are designed to communicate with the computer memory.

Re: claims 1 and 6, Hyvonen et al. renders obvious an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

Re: claim 2, Pollock (USPN 5,923,572) renders obvious a memory (56) being fed from that memory to a second mobile memory (30 mounted on hose is mobile) and that after carrying

out an operation the information is transmitted from the second memory to the aforementioned memory (column 3, lines 60-65).

Pollock renders obvious a gun (12) with a reservoir (inherent) which is connected by way of a pump device (45) and a measuring device (44) to a nozzle (end portion of dispenser), a control element (24) connected to the measuring device and the pump device connected to which control element is a memory containing stored data (30) of an individual point, with which memory the gun is designed to communicate for transfer to the control element of a quantity specification (column 4, lines 4-17) for a lubrication point and for feeding information stored in the control element on the operation carried out at the individual point (also column 4, lines 4-17), and a point identification device (21) arranged in connection with the nozzle and designed, when the nozzle is connected to a point, to automatically identify the point in question and its requirement by means of the identification element together with means for storing in the memory data on the quantity administered to the point in question in each operation (column 3, lines 65-67, column 4, lines 1-3);

Re: claim 7, Pollack renders obvious the device comprises communication equipment designed to achieve communication between the control element and a fixed computer.

Re: claim 8, Pollack renders obvious communications equipment composed of radio communications equipment (38, 39, 71, 72).

Re: claim 9, Pollock renders obvious that the control element (24) comprises memory elements (84) designed to store the said data and information for a time interval between the beginning and end of one operation round and that the memory elements are designed to communicate with the computer memory (30).

To modify the apparatus of Elkin et al. so as to include an apparatus with a plurality of lubrication points with a quantity of lubricant individually determined for each lubrication point would have been obvious to one of ordinary skill in the art in view of the teachings of Hyvonen et al. that such an arrangement improves overall bearing lives for rollers.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the dispensing apparatus of Elkin et al. with the gun dispenser, and the control element to communicate with an identification point, as taught by Pollack, for the purpose of eliminating need for operator input, which reduces the labor cost.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the communications apparatus of Elkin et al. with the radio communication, as taught by Pollack, for the purpose of a wireless transmission, which decreases the overall response time.

It would have been obvious to one of ordinary skill in the art at the time, of the invention to modify the apparatus of Elkin et al. to utilize memory storage and communication, as taught by Pollack, for the purpose of tracking the quantity dispensed of the lubrication apparatus to accurately calculate total sales, further maximizing profits.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the memory transmitting device of Elton et al. by adding a second mobile memory, as taught by Pollock, for the purpose of eliminating need for operator input, which reduces the labor cost.

#### *Response to Arguments*

6. Applicant's arguments filed November 18, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that Elkin, Hyvonen, and Pollack are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, clearly Elkin is drawn to lubricating fluids, which is analogous to the instant invention. Hyvonen, similar to the instant invention is lubricating paper machines and therefore is analogous art. Finally, Pollack solves various problems associated with the instant invention such as the use of a wireless transmission and the monitoring of a system.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley J Van Pelt whose telephone number is 703.305.8176. The examiner can normally be reached on M-Th 7:00-4:30, 2nd F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on 703.308.3668. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.2168.

bjvp 

DAVID A. BUCCI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600



S/N 10/009,165

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|             |  |                   |                     |
|-------------|--|-------------------|---------------------|
| Applicant:  | Funck et al.   | Examiner:         | Bradley J. Van Pelt |
| Serial No.: | 10/009,165   | Group Art Unit:   | 3682                |
| Filed:      | November 7, 2001   | Docket No.:       | 11709.46USWO        |
| Cust. No.:  | 23552  | Confirmation No.: | 8653                |
| Title:      | Method in and Device for the Manual Lubrication of a Plurality of Lubrication Points |                   |                     |

CERTIFICATE UNDER 37 CFR 1.6(d):

The undersigned hereby certifies that this correspondence is being transmitted via facsimile to: Commissioner for Patents, Attention: Examiner Bradley J. Van Pelt, P.O. 1450, Alexandria, VA 22313-1450 on November 18, 2003.

By: Nicole Landree  
Name: Nicole Landree

AMENDMENT

Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed on June 18, 2003, and in conjunction with the Request For Continued Examination filed herewith, please consider and enter the following amendments and remarks. Claims 1-9 remain pending in the application.

Amendments to the claims begin at page 2 of this paper.

Remarks begin at page 5 of this paper.

### In the Claims

The following listing of the claims replaces all previous listings of the claims.

1. (Currently Amended) A system for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the lubrication points of the apparatus are provided with individual an identification element, based upon which information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication, ~~which is stored in~~ is retrievable from a memory, wherein the lubricant is delivered by a lubricant gun having a lubrication nozzle, and wherein, in the lubrication of a lubrication point of the apparatus, the identification element associated with of the lubrication point is detected by a lubrication point identification device arranged at the lubrication nozzle and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory, following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out ~~and time thereof~~ is stored in the memory.
2. (Previously Presented) System according to claim 1, wherein, in connection with a planned lubrication round, information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory is fed from that memory to a second, mobile memory and that, after carrying out the lubrication round, the information is transmitted from the second memory to the aforementioned memory.
3. (Previously Presented) System according to claim 1, wherein, on identification of an individual lubrication point, the quantity of lubricant is shown that is to be administered to the lubrication point in question and that, when the quantity has been administered, the administration is shown and/or indicated by audible means.
4. (Previously Presented) System according to claim 1, wherein a list of lubrication points visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory.

5. (Previously Presented) System according to claim 1, wherein the time for a subsequent lubrication round and information on the quantity of lubricant for the individual lubrication points is calculated from information stored in the memory.

6. (Previously Presented) A device for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the device comprises:

an identification element unique to the lubrication point at each lubrication point of the apparatus,

a lubricant gun with a lubricant reservoir, which is connected by way of a pump device and a measuring device with indicating element to a nozzle, and

a control element connected to the measuring device and the pump device, connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point of the apparatus, with which memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points, and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element, together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.

7. (Previously Presented) Device according to claim 6, wherein the device comprises communications equipment designed to achieve communication between the control element and a fixed computer.

8. (Previously Presented) Device according to claim 7, wherein the communications equipment is radio communications equipment.

9. (Previously Presented) Device according to claim 7, wherein the control element comprises memory elements designed to store the data and information for a time interval between a beginning and end of one lubrication round and wherein the memory elements are designed to communicate with the computer memory.

### Remarks

This is response to the Office Action mailed on June 18, 2003, and is filed in conjunction with the Request for Continued Examination. Claim 1 has been amended. No new matter has been added. Claims 1-9 remain pending in the application. Reconsideration and allowance are respectfully requested in view of the following remarks.

In section 2 of the Office Action, claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Elkin et al., U.S. Patent No. 6,123,174, in view of Hyvönen et al., U.S. Patent No. 5,813,496, and Pollock, U.S. Patent No. 5,923,572. This rejection is respectfully traversed, and reconsideration and allowance of claims 1-9 are respectfully requested in view of the following remarks.

#### **I. Independent Claims 1 and 6**

Claims 1 and 6 generally recite a system and device for manual lubrication of an apparatus having a plurality of lubrication points. Claim 1, for example, recites that the lubrication points of the apparatus are provided with an identification element, based upon which the quantity of lubricant that is to be administered to each lubrication point in each instance of lubrication is retrievable from a memory. Claim 1 further recites that the system includes a lubricant gun having a lubrication nozzle, and that the identification element associated with the lubrication point of the apparatus is detected by a lubrication point identification device arranged at the lubrication nozzle. Claim 1 further recites that the information on the predetermined quantity of lubricant for the lubrication point is retrieved from memory, administered to the lubrication point, and information on the lubrication carried out is stored in the memory.

The system recited by claim 1 is advantageous because the system allows an apparatus to be efficiently manually lubricated at a plurality of points. In addition, a quantity of lubrication to be applied at each point including an identification element can be automatically identified using the identification device, which allows the amount of lubricant to be applied to be identified approximately simultaneously with the lubrication process itself. This can eliminate the need for an operator to go through multiple steps of inputting information to identify each lubrication point, thereby further enhancing efficiency.

Claim 6, although not identical in scope, includes limitations similar to those described above with respect to claim 1.

## II. The Elkin Reference

The Elkin reference discloses a system for automatically extracting fluid from and injecting fluid into a reservoir in a vehicle. Elkin, abstract.

Elkin is not directed to a system for manual lubrication of an apparatus, as recited by claims 1. Instead, Elkin discloses an apparatus to extract and replace a large quantity of oil from a crankcase of an automobile. In other words, while the systems and devices disclosed and claimed herein are directed to manual lubrication of an apparatus, Elkin is directed replacement of fluids.

Consequently, Elkin is non-analogous art, in that one skilled in the art of manual lubrication of an apparatus would not turn to the apparatus disclosed by Elkin in solving problems associated with systems and devices for the manual lubrication of an apparatus. Further, Elkin is non-analogous art because the problem solved by Elkin (replacement of fluids) is not the same as the problem solved by the systems and devices for the manual lubrication of an apparatus disclosed herein. See MPEP 2145(IX).

In addition, the rejection states that Elkin neither discloses nor suggests a system or device for manual lubrication of an apparatus having a plurality of lubrication points. This further illustrates that Elkin is non-analogous art, because Elkin is directed at replacement of fluids, while the claims of the present application are directed at the manual lubrication of an apparatus having a plurality of lubrication points.

Further, since Elkin only discloses replacement of fluid at a single point, Elkin necessarily fails to suggest a system including a plurality of lubrication points, with each lubrication point being provided with an identification element, as recited by claim 1.

Nor does Elkin disclose identification of the lubrication point during the lubrication, as recited by claim 1. In Elkin, a vehicle to be serviced is selected by inputting the vehicle identification information. Elkin, Figure 24 and column 20, lines 17-21. After the vehicle is selected using the vehicle identification information, additional choices are made from the service menu and service can then be performed. *Id.* Therefore, Elkin fails to suggest lubrication points with an identification element, based upon which information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication is retrievable from a memory, as recited by claim 1.

Elkin further fails to disclose or suggest a lubrication identification device arranged at the lubrication nozzle, as recited by claim 1. Instead, Elkin discloses a barcode reader or keyboard for inputting the vehicle identification information. Elkin, column 20, lines 30-40. Such reader or keyboard is arranged separate from the delivery nozzle for the fluid. Id. Therefore, Elkin fails to disclose or suggest a lubrication point identification device arranged at a lubrication nozzle, as recited by claim 1.

### **III. The Hyvönen Reference**

Hyvönen discloses an automated system for monitoring and controlling the circulation lubrication of the bearings of a paper machine. In Hyvönen, lubrication oil is automatically fed from an oil-lubrication center through a series of pipes to lubrication points, and is fed back to the center through a system of return pipes. Hyvönen, abstract.

It is respectfully suggested that Hyvönen is non-analogous art, since Hyvönen discloses an automated system for controlling lubrication, while claim 1 recites a system for manual lubrication. One skilled in the art of manual lubrication would not turn to Hyvönen when attempting to solve problems in the art. Further, Hyvönen is directed at solving a problem dissimilar to that solved by a system designed in accordance with claim 1, in that Hyvönen provides an automated system for lubrication including a series of pipes to deliver the lubricant, while the present application is directed at a system and device for manual lubrication using a lubricant gun.

### **IV. The Pollock Reference**

Pollock discloses a device for controlling, authorizing, and accounting for gasoline delivered to an automobile. The device includes a radio frequency identification tag mounted on the fuel nozzle and an automotive information module mounted in the vehicle. Pollock, abstract.

For similar reasons to those provided above with respect to Elkin, Pollock is non-analogous art.

Pollock simply regulates an amount of gasoline provided to an automobile. Therefore, one skilled in the art of manual lubrication would not look to the system disclosed by Pollock for solving problems associated with the art. In addition, the problem solved by Pollock (i.e.,

controlling and accounting for gasoline dispensed into an automobile gas tank) is not pertinent to the problems addressed in the present application.

Further, like Elkin, Pollock discloses only a single fuel filling point and an automotive information module at an automobile. Therefore, Pollock fails to disclose a plurality of lubrication points, or that the lubrication points are provided with an identification element, as recited by claim 1.

**V. Combination of Elkin, Hyvönen, and Pollock References**

There is no motivation provided in Elkin, Hyvönen, and Pollock, or the level of skill in the art, to suggest the combination of the references. See MPEP 2143.01. As noted previously, Elkin discloses replacement of fluid from a crankcase of an automobile and Pollock discloses control of gasoline dispensed into a gas tank of an automobile. In contrast, Hyvönen discloses a lubrication circulation system for a paper machine. None of the references suggest that it would be desirable to combine a fluid replacement system or gas regulation system for an automobile (Elkin and Pollock) with a fluid circulation system for a paper machine (Hyvönen), and one skilled in the art would not be motivated to combine systems configured to replace fluid in a crankcase or gas tank of an automobile with a system including a plurality of pipes to circulate fluid through the system.

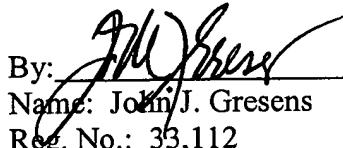
**VI. Conclusion**

Claim 6, although not identical in scope to claim 1, includes limitations similar to those described above with respect to claim 1. For at least the reasons provided above, claims 1 and 6, as well as claims 2-5 and 7-9 that depend therefrom, should be allowable. Reconsideration and allowance are respectfully requested.

Favorable reconsideration in the form of a Notice of Allowance is respectfully requested. The Examiner is encouraged to contact the undersigned attorney with any questions regarding this application.

Respectfully submitted,  
MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Date: November 18, 2003

By:   
Name: John J. Gresens  
Reg. No.: 33,112  
JJG/RAK



UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NO. | FILING DATE | NAME OF FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------------|---------------------|------------------|
| 10/009,165      | 11/07/2001  | Paer-Olof Funck              | 11709.46USWO        | 8653             |

23552 7590 10/01/2003  
MERCHANT & GOULD PC  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

EXAMINER

VAN PELT, BRADLEY J

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 10/01/2003

JJG

FR 6 mo: Dec 18, 2003 *JK*

Please find below and/or attached an Office communication concerning this application or proceeding.

PROLAW

Advisory Action



Application No.

10/009,165

Applicant(s)

FUNCK ET AL.

Examiner

Bradley J Van Pelt

Art Unit

3682

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 17 September 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

a)  The period for reply expires 3 months from the mailing date of the final rejection.  
b)  The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.  
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1.  A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2.  The proposed amendment(s) will not be entered because:
  - (a)  they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b)  they raise the issue of new matter (see Note below);
  - (c)  they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d)  they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_.

3.  Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4.  Newly proposed or amended claim(s) \_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5.  The a) affidavit, b) exhibit, or c) request for reconsideration has been considered but does NOT place the application in condition for allowance because: it is not deemed to overcome the rejection.
6.  The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7.  For purposes of Appeal, the proposed amendment(s) a) will not be entered or b) will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: \_\_\_\_\_.

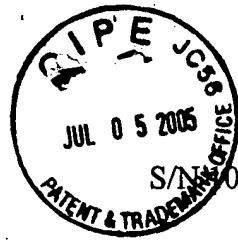
Claim(s) withdrawn from consideration: \_\_\_\_\_.

8.  The proposed drawing correction filed on \_\_\_\_ is a) approved or b) disapproved by the Examiner.

9.  Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.

10.  Other: \_\_\_\_\_.

DAVID A. BUCCI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600



S/N 10/009,165

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|             |  |                   |                     |
|-------------|--|-------------------|---------------------|
| Applicant:  | Funck et al.   | Examiner:         | Bradley J. Van Pelt |
| Serial No.: | 10/009,165   | Group Art Unit:   | 3682                |
| Filed:      | November 7, 2001   | Docket No.:       | 11709.46USWO        |
| Cust. No.:  | 23552  | Confirmation No.: | 8653                |
| Title:      | Method in and Device for the Manual Lubrication of a Plurality of Lubrication Points |                   |                     |

CERTIFICATE UNDER 37 CFR 1.6(d):

The undersigned hereby certifies that this correspondence is being transmitted via facsimile to: Commissioner for Patents, Attention: Examiner Bradley J. Van Pelt, P.O. 1450, Alexandria, VA 22313-1450 on September 1, 2003.

By: *Patricia L. Larrimore*  
Name: Patricia L. Larrimore

RESPONSE

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed on June 18, 2003, please consider and enter the following remarks. Claims 1-9 remain pending in the application.

Remarks begin at page 2 of this paper.

### Remarks

This is response to the Office Action mailed on June 18, 2003. Claims 1-9 remain pending in the application. Reconsideration and allowance are respectfully requested in view of the following remarks.

In section 2 of the Office Action, claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Elkin et al., U.S. Patent No. 6,123,174, in view of Hyvönen et al., U.S. Patent No. 5,813,496, and Pollock, U.S. Patent No. 5,923,572. This rejection is respectfully traversed.

Claims 1 and 6 generally recite a system and device for manual lubrication of an apparatus having a plurality of lubrication points.

As noted in the Office Action, Elkin neither discloses nor suggests a system or device for manual lubrication of an apparatus having a plurality of lubrication points.

Hyvönen discloses an automated system for monitoring and controlling the circulation lubrication of the bearings of a paper machine. In Hyvönen, lubrication oil is automatically fed from an oil-lubrication center through a series of pipes to lubrication points, and is fed back to the center through a system of return pipes. Hyvönen, abstract.

The rejection states that it would have been obvious to combine the disclosure of Hyvönen with Elkin. This combination is respectfully traversed, for the reasons provided below.

First, there is no suggestion as to how the system for lubrication replacement disclosed by Elkin could be combined with the lubrication circulation system disclosed by Hyvönen. In Elkin, lubrication fluid in a crankcase of a vehicle engine is replaced (see, e.g., Elkin, abstract), while in Hyvönen lubrication is circulated through a series of pipes to a plurality of points of a machine. Therefore, because it is physically unclear as to how the lubrication replacement system of Elkin could be combined with the lubrication circulation system of Hyvönen, one skilled in the art would not be motivated to combine the systems since the systems are configured to perform different functions. See MPEP 2145(III).

Second, there is no motivation provided in either reference or the level of skill in the art to suggest the combination. See MPEP 2143.01. As noted previously, Elkin discloses replacement of fluid at a single point, while Hyvönen discloses a lubrication circulation system for a machine. Neither reference suggests it would be desirable to combine a fluid replacement system (Elkin) with a fluid circulation system (Hyvönen), and one skilled in the art would not

motivated to combine a system configured to replace fluid at single point with a system including a plurality of pipes to circulate fluid through the system.

Third, assuming for sake of argument only that the system of Elkin can be combined with the system of Hyvönen, neither reference discloses a system or device for manual lubrication of an apparatus having a plurality of lubrication points, as recited by claims 1 and 6. Elkin discloses only replacement of lubrication fluid at a single point. Hyvönen discloses a system for the automated circulation of fluid to a plurality of points of a machine. There is no suggestion in Hyvönen that it would be desirable to configure the system to allow manual lubrication of the machine, or even how such a modification of Hyvönen could be accomplished.

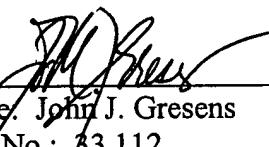
Pollock does not remedy the shortcomings of Elkin and Hyvönen noted above.

For at least these reasons, claims 1 and 6, as well as claims 2-5 and 7-9 that depend therefrom, should be allowable. Reconsideration and allowance are respectfully requested.

Favorable reconsideration in the form of a Notice of Allowance is respectfully requested. The Examiner is encouraged to contact the undersigned attorney with any questions regarding this application.

Respectfully submitted,  
MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Date: September 17, 2003

By:   
Name: John J. Gresens  
Reg. No.: 33,112  
JJG/RAK



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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/009,165      | 11/07/2001  | Paer-Olof Funck      | 11709.46USWO✓       | 8653             |

23552 7590 06/18/2003  
MERCHANT & GOULD PC  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

JTG



EXAMINER

VAN PEEL, BRADLEY J

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 06/18/2003

FR 2mo: Aug. 18, 2003

FR 3/PTA: Sept. 18, 2003

FR 6mo: Dec. 18, 2003

XH

Please find below and/or attached an Office communication concerning this application or proceeding.

Hansen

PROLAW



## Office Action Summary

|                    |              |  |
|--------------------|--------------|--|
| Application No.    | Applicant(s) |  |
| 10/009,165         | FUNCK ET AL. |  |
| Examiner           | Art Unit     |  |
| Bradley J Van Pelt | 3682         |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) Responsive to communication(s) filed on 21 May 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-9 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 07 November 2002 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) Other:

**DETAILED ACTION***Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elkin et al. (USPN 6,123,174) in view of Hyvonen et al. (USPN 5,813,496) in view of Pollack.

Elkin et al. disclose a system for manual lubrication of a lubrication point with a quantity of lubricant individually predetermined for the lubrication point, wherein the lubrication point is provided with an individual identification information (column 16, lines 8-13) on the quantity (column 16, line 15) of lubricant that is to be administered to the lubrication point in each instance of lubrication is stored in a memory (column 16, lines 13-16), and wherein in the lubrication of a lubrication point the identification of the point is detected (bar code reader 216 see column 20, lines 30-40) and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory (column 20 lines 25-29), following which the said quantity of lubricant is administered to the lubrication point, information on the lubrication carried out and the time thereof is stored in the memory (column 26, lines 41-45).

Elkin et al. disclose that on identification of an individual lubrication point the quantity of lubricant is shown that is to be administered (column 25, lines 12-17) to the lubricant point in question and that when the quantity has been administered the administration is shown and/or indicated by audible means (column 25, lines 24-27).

Elkin et al. disclose that a list of lubrication points (engines and vehicles) visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory (column 26 lines 42-47).

Elkin et al. inherently disclose in that the time for a subsequent lubrication round information on the quantity of lubrication for the individual lubrication point is calculated from information stored in the memory. Elkin et al. disclose (column 16, lines 11-16) the database tracks which services have been preformed, thus it is calculated either by computer or user when next operation is due.

Re: claim 6, Elkin et al. disclose a device for manual lubrication of a lubrication point with a quantity of lubricant individually predetermined for each lubrication point, characterized in that the device comprises a combination of: an identification element unique to the lubrication point (bar code, see column 16, line 56) unique to the lubrication point at a lubrication point (engine in Elkin) and a measuring device (78), a reservoir (24) which is connected by way of a pump device (76) and a measuring device (78) with indicating element (96) and a dispensing apparatus (166);

Elkin et al. fail to show an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

Elkin et al. fail to show in connection with a planned lubrication round information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory is fed from that memory to a second mobile memory and that after carrying out the lubrication round the said information is transmitted from the second memory to the aforementioned memory.

Elkin et al. do not disclose a lubricant gun with a lubricant reservoir which is connected by way of a pump device and the pump device connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point, with which memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points, and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation;

the device comprises communication equipment designed to achieve communication between the control element and a fixed computer;

communications equipment composed of radio communications equipment;

the control element comprises memory elements designed to store the data and information for a time interval between the beginning and end of one operation round and that the memory elements are designed to communicate with the computer memory.

Re: claims 1 and 6, Hyvonen et al. renders obvious an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

Re: claim 2, Pollock (USPN 5,923,572) renders obvious a memory (56) being fed from that memory to a second mobile memory (30 mounted on hose is mobile) and that after carrying

out an operation the information is transmitted from the second memory to the aforementioned memory (column 3, lines 60-65).

Pollock renders obvious a gun (12) with a reservoir (inherent) which is connected by way of a pump device (45) and a measuring device (44) to a nozzle (end portion of dispenser), a control element (24) connected to the measuring device and the pump device connected to which control element is a memory containing stored data (30) of an individual point, with which memory the gun is designed to communicate for transfer to the control element of a quantity specification (column 4, lines 4-17) for a lubrication point and for feeding information stored in the control element on the operation carried out at the individual point (also column 4, lines 4-17), and a point identification device (21) arranged in connection with the nozzle and designed, when the nozzle is connected to a point, to automatically identify the point in question and its requirement by means of the identification element together with means for storing in the memory data on the quantity administered to the point in question in each operation (column 3, lines 65-67, column 4, lines 1-3);

Re: claim 7, Pollack renders obvious the device comprises communication equipment designed to achieve communication between the control element and a fixed computer.

Re: claim 8, Pollack renders obvious communications equipment composed of radio communications equipment (38, 39, 71, 72).

Re: claim 9, Pollock renders obvious that the control element (24) comprises memory elements (84) designed to store the said data and information for a time interval between the beginning and end of one operation round and that the memory elements are designed to communicate with the computer memory (30).

To modify the apparatus of Elkin et al. so as to include an apparatus with a plurality of lubrication points with a quantity of lubricant individually determined for each lubrication point would have been obvious to one of ordinary skill in the art in view of the teachings of Hyvonen et al. that such an arrangement improves overall bearing lives for rollers.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the dispensing apparatus of Elkin et al. with the gun dispenser, and the control element to communicate with an identification point, as taught by Pollack, for the purpose of eliminating need for operator input, which reduces the labor cost.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the communications apparatus of Elkin et al. with the radio communication, as taught by Pollack, for the purpose of a wireless transmission, which decreases the overall response time.

It would have been obvious to one of ordinary skill in the art at the time, of the invention to modify the apparatus of Elkin et al. to utilize memory storage and communication, as taught by Pollack, for the purpose of tracking the quantity dispensed of the lubrication apparatus to accurately calculate total sales, further maximizing profits.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the memory transmitting device of Elton et al. by adding a second mobile memory, as taught by Pollock, for the purpose of eliminating need for operator input, which reduces the labor cost.

#### *Response to Arguments*

3. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Horttonen (USPN 4,519,247), Witczak (USPN 5,029,672), Totaro (USPN 6,068,164), Hulkkonen et al. (USPN 6,471,006).

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 3682

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley J Van Pelt whose telephone number is (703)305-8176. The examiner can normally be reached on M-Th 7:00-4:30, 2nd F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on (703)308-3668. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-9391 for regular communications and (703)305-3597 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-2168.

BJVP  
June 13, 2003

DAVID A. BUCCI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600



## Notice of References Cited

|                                       |   |             |
|---------------------------------------|---|-------------|
| Application/Control No.<br>10/009,165 | Applicant(s)/Patent Under Reexamination<br>FUNCK ET AL. |             |
| Examiner<br>Bradley J Van Pelt        | Art Unit<br>3682  | Page 1 of 1 |

### U.S. PATENT DOCUMENTS

| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name              | Classification |
|---|--|-----------------|-------------------|----------------|
| A | US-4,519,247                                     | 05-1985         | Horttonen, Kalevi | 184/7.4        |
| B | US-5,029,672                                     | 07-1991         | Witczak, Stanley  | 184/7.4        |
| C | US-5,813,496                                     | 09-1998         | Hyvonen et al.    | 184/6.4        |
| D | US-6,068,164                                     | 05-2000         | Totaro, Luigi     | 222/389        |
| E | US-6,471,006                                     | 10-2002         | Hulkonen et al.   | 184/6.21       |
| F | US-  |                 |                   |                |
| G | US-  |                 |                   |                |
| H | US-  |                 |                   |                |
| I | US-  |                 |                   |                |
| J | US-  |                 |                   |                |
| K | US-  |                 |                   |                |
| L | US-  |                 |                   |                |
| M | US-  |                 |                   |                |

### FOREIGN PATENT DOCUMENTS

| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | Classification |
|---|--|-----------------|---------|------|----------------|
| N |  |                 |         |      |                |
| O |  |                 |         |      |                |
| P |  |                 |         |      |                |
| Q |  |                 |         |      |                |
| R |  |                 |         |      |                |
| S |  |                 |         |      |                |
| T |  |                 |         |      |                |

### NON-PATENT DOCUMENTS

| * | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |  |
|---|---|--|
| U |   |  |
| V |   |  |
| W |   |  |
| X |   |  |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Funck et al. Examiner: Bradley J. Van Pelt  
Serial No.: 10/009,165 Group Art Unit: 3682  
Filed: November 7, 2001 Docket No.: 11709.46USWO  
Title: Method in and Device for the Manual Lubrication of a Plurality of Lubrication Points

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CERTIFICATE UNDER 37 CFR 1.6(d):

The undersigned hereby certifies that this correspondence is being transmitted via facsimile to: Commissioner for Patents, Attention: Examiner Bradley J. Van Pelt, P.O. 1450, Alexandria, VA 22313-1450 on May 21, 2003.

By: *Patricia L. Larrimore*  
Name: Patricia L. Larrimore

SUPPLEMENTAL AMENDMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In supplement to the Amendment filed on April 16, 2003, please consider and enter the following additional amendments and remarks. Claims 1-9 remain pending in the application.

Amendments to the claims begin at page 2 of this paper.

Remarks begin at page 5 of this paper.

### In the Claims

The following listing of the claims replaces all previous listings of the claims.

1. (Currently Amended) A method system for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the lubrication points of the apparatus are provided with an individual identification information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication, which is stored in a memory, and wherein in the lubrication of a lubrication point of the apparatus the identification of the point is detected and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory, following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out and time thereof is stored in the memory.
2. (Currently Amended) Method System according to claim 1, wherein, in connection with a planned lubrication round, information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory is fed from that memory to a second, mobile memory and that, after carrying out the lubrication round, the information is transmitted from the second memory to the aforementioned memory.
3. (Currently Amended) Method System according to claim 1, wherein, on identification of an individual lubrication point, the quantity of lubricant is shown that is to be administered to the lubrication point in question and that, when the said quantity has been administered, the administration is shown and/or indicated by audible means.
4. (Currently Amended) Method System according to claim 1, wherein a list of lubrication points visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory.

5. (Currently Amended) Method System according to claim 1, wherein the time for a subsequent lubrication round and information on the quantity of lubricant for the individual lubrication points is calculated from information stored in the memory.
6. (Currently Amended) A device for manual lubrication of an apparatus having a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point, wherein the device comprises:
  - an identification element unique to the lubrication point at each lubrication point of the apparatus,
  - a lubricant gun with a lubricant reservoir, which is connected by way of a pump device and a measuring device with indicating element to a nozzle, and
  - a control element connected to the measuring device and the pump device, connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point of the apparatus, with which memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points, and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element, together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.
7. (Previously Amended) Device according to claim 6, wherein the device comprises communications equipment designed to achieve communication between the control element and a fixed computer.
8. (Previously Amended) Device according to claim 7, wherein the communications equipment is radio communications equipment.

9. (Previously Amended) Device according to claim 7, wherein the control element comprises memory elements designed to store the data and information for a time interval between a beginning and end of one lubrication round and wherein the memory elements are designed to communicate with the computer memory.

Remarks

This is in supplement to the Amendment filed on April 16, 2003. Claims 1-6 have been amended. No new matter has been added. Claims 1-9 remain pending. Reconsideration and allowance are respectfully requested in view of the above supplemental amendments and following remarks.

Applicants wish to thank the Examiner for the courtesy extended during the telephonic interview held on May 6, 2003. During the interview, claim 1 of the present application and Elkin, U.S. Patent No. 6,123,174, were discussed. Agreement was reached that Elkin discloses an apparatus with only a single lubrication point. The amendments and remarks contained herein are consistent with the discussions held during the interview.

Claims 1 and 6 recite a system and device for manual lubrication of an apparatus having a plurality of lubrication points. As previously discussed, Elkin neither discloses nor suggests a system or device for manual lubrication of an apparatus having a plurality of lubrication points. For at least this reason, claims 1 and 6, as well as claims 2-5 and 7-9 that depend therefrom, should be allowable. Reconsideration and allowance are respectfully requested.

Favorable reconsideration in the form of a Notice of Allowance is respectfully requested. The Examiner is encouraged to contact the undersigned attorney with any questions regarding this application.

Respectfully submitted,  
MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

By: Robert A. Kalinsky  
Name: Robert A. Kalinsky  
Reg. No.: 50,471  
RAK:pll

Date: May 21, 2003





S/N 10/009,165

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Funck et al. Examiner: Bradley J. Van Pelt  
Serial No.: 10/009,165 Group Art Unit: 3682  
Filed: November 7, 2001 Docket No.: 11709.46USWO  
Title: Method in and Device for the Manual Lubrication of a Plurality of Lubrication Points

CERTIFICATE UNDER 37 CFR 1.6(d):

The undersigned hereby certifies that this correspondence is being transmitted via facsimile to: Commissioner for Patents, Attention: Examiner Bradley J. Van Pelt, P.O. Box 1450, Alexandria, VA 22313-1450 on May 21, 2003.

By: *Patricia L. Laramore*  
Name: Patricia L. Laramore

ASSOCIATE POWER OF ATTORNEY

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

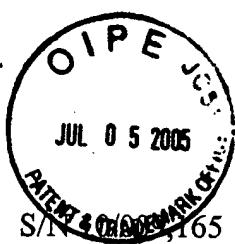
Please recognize Robert A. Kalinsky, Registration No. 50,471, as associate attorney in the above-identified application, with full power to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith.

Respectfully submitted,  
MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, MN 55402-0903  
612.332.5300

By: *Gregory A. Sebald*  
Gregory A. Sebald  
Reg. No. 33,280  
GAS/RAK:pll

Date: May 21, 2003





PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Funck et al. Examiner: Bradley J. Van Pelt  
Serial No.: 10/009,165 Group Art Unit: 3682  
Filed: November 7, 2001 Docket No.: 11709.46USWO  
Title: Method in and Device for the Manual Lubrication of a Plurality of Lubrication Points

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CERTIFICATE UNDER 37 CFR 1.6(d):

The undersigned hereby certifies that this correspondence is being transmitted via facsimile to: Commissioner for Patents, Attention: Examiner Bradley J. Van Pelt, P.O. 1450, Alexandria, VA 22313-1450 on April 16, 2003.

By:  
Name: *John J. Munoz*

AMENDMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed on January 16, 2003, please consider and enter the following amendments and remarks.

Amendments to the abstract begin at page 2 of this paper.

Amendments to the specification begin at page 3 of this paper.

Amendments to the claims begin at page 4 of this paper.

Remarks begin at page 7 of this paper.

### In the Abstract

Please amend the abstract as indicated below.

[The invention relates to a] A method [in] and a device for the manual lubrication of a plurality of lubrication points [(10)] with a quantity of lubricant individually predetermined for each lubrication point. The lubrication points are provided with individual identification elements [(11)]. Information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication is stored in a memory [(12)]. During lubrication, the lubrication point is identified and information on the predetermined quantity of lubricant is retrieved from the memory [(12)], following which [this] lubricant is administered to the lubrication point. Information on the lubrication carried out and the [time] time thereof is stored in the memory. The device [comprises] includes a lubricant [gum (1)] gun with a lubricant reservoir, a pump device, a measuring device [(4)] with indicating element [(5)] and a nozzle [(6)]. [The measuring device (4) and the pump device are connected to a control element (8). Connected to the control element is a memory containing stored data on the lubrication requirement of each lubrication point. The lubricant gum (1) communicates with the memory for transfer to the control element (8) of a lubricant quantity specification for each lubrication point and for feeding information stored in the control element (8) on lubrication carried out at the lubrication points. A lubrication point identification device (9) arranged on the nozzle (6) automatically identifies the lubrication point (10) when the nozzle (6) is connected thereto with the identification element (11). Means are provided for storing data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.]

**In the Specification**

Please delete the paragraph beginning at page 1, line 1.

Please insert the following heading at page 1, line 3.

**Background**

Please insert the following heading at page 1, line 17.

**Summary**

Please amend the paragraph beginning at page 1, line 18, as follows.

The object of the present invention is to provide a method of the said type, by means of which the lubrication of all lubrication points with the correct quantity of lubricant can be ensured and in which the lubrication is reliably documented. [This is achieved by means of the features specified in the characterising part of claim 1.]

Please delete the paragraph beginning at page 1, line 23.

Please insert the following heading at page 1, line 25.

**Description of the Drawings**

Please amend the paragraph beginning at page 1, line 26, as follows.

The invention will be explained in more detail below with reference to the [drawing] attached drawings, in which:

[figure] Figure 1 shows a diagram of a device according to the invention; and

[figure] Figure 2 illustrates the functioning thereof.

Please insert the following heading at page 1, line 29.

**Detailed Description**

### In the Claims

The following listing of the claims replaces all previous listings of the claims.

1. (Presently Amended) [Method in the] A method for manual lubrication of a plurality of lubrication points [(10)] with a quantity of lubricant individually predetermined for each lubrication point, [characterised in that] wherein the lubrication points are provided with an individual identification [(11)] information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication is stored in a memory [(12)], and wherein in the lubrication of a lubrication point the identification [(11)] of the point is detected and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory [(12)], following which the [said] quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out and [the] time thereof is stored in the memory.
2. (Presently Amended) Method according to claim 1, [characterised in that] wherein, in connection with a planned lubrication round, information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory [(12)] is fed from that memory to a second, mobile memory [(8)] and that, after carrying out the lubrication round, the [said] information is transmitted from the second memory [8] to the aforementioned memory [(12)].
3. (Presently Amended) Method according to claim 1, [characterised in that] wherein, on identification of an individual lubrication point, [(10)] the quantity of lubricant is shown that is to be administered to the lubrication point in question and that, when the said quantity has been administered, [this] the administration is shown [(5)] and/or indicated by audible means [(16)].
4. (Presently Amended) Method according to claim 1, [characterised in that] wherein a list [(17)] of lubrication points visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory [(8; 12)].

5. (Presently Amended) Method according to claim 1, [characterised in that] wherein the time for a subsequent lubrication round and information on the quantity of lubricant for the individual lubrication points is calculated from information stored in the memory [(8; 12)].

6. (Presently Amended) [Device] A device for [the] manual lubrication of a plurality of lubrication points [(10)] with a quantity of lubricant individually predetermined for each lubrication point, [characterised in that] wherein the device comprises [a combination of]:

an identification element [(11)] unique to the lubrication point at each lubrication point [(10)],

a lubricant gun [(1)] with a lubricant reservoir, which is connected by way of a pump device and a measuring device [(4)] with indicating element [(5)] to a nozzle [(6)],

a control element [(8)] connected to the measuring device [(4)] and the pump device, connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point, with which memory the lubricant gun [(1)] is designed to communicate for transfer to the control element [(8)] of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element [(8)] on the lubrication carried out at the individual lubrication points, and a lubrication point identification device [(9)] arranged in connection with the nozzle [(6)] and designed, when the nozzle [(6)] is connected to a lubrication point, to automatically identify the lubrication point [(10)] in question and its lubrication requirement by means of the identification element [(11)], together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.

7. (Presently Amended) Device according to claim 6, [characterised in that the memory is the memory of a fixed computer (12) and that] wherein the device comprises communications equipment designed to achieve communication between the control element [(8)] and [the computer memory] a fixed computer.

8. (Presently Amended) Device according to claim 7, [characterised in that] wherein the communications equipment is radio communications equipment.

9. (Presently Amended) Device according to claim 7, [characterised in that] wherein the control element [(8)] comprises memory elements designed to store the [said] data and information for a time interval between [the] a beginning and end of one lubrication round and [that] wherein the memory elements are designed to communicate with the computer memory.

### Remarks

This is in response to the Office Action mailed on January 16, 2003. The abstract, specification, and claims have been editorially amended. No new matter has been added. Claims 1-9 remain pending. Reconsideration and allowance of all claims are respectfully requested.

In sections 1 and 2 of the Office Action, the abstract was objected to based on length and legal phraseology used therein. The abstract has been amended to be less than 150 words, and all legal phraseology has been removed. Removal of the objection is respectfully requested.

In sections 3 and 4 of the Office Action, the specification was objected to apparently for lacking headings and also for spelling and referencing the claims. The specification has been amended to add section headings and address the noted informalities. Reconsideration is respectfully requested.

In sections 5 and 6, claim 7 was rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter not described in such a way as to enable one skilled in the art to make or use the invention. This rejection is respectfully traversed.

Specifically, the rejection states that it is unclear how the memory set forth in claim 6, as a control element defined in the specification as reference numeral 8, can be a fixed computer, because the control element 8 is moveable as shown in the drawings. Claim 7 has been amended to address the issues identified by the rejection. Reconsideration and allowance of claim 7 are respectfully requested.

In sections 7 and 8, claims 6-9 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the rejection notes a lack of antecedent basis for limitations in claims 6 and 7. The noted claims have been amended to address the identified informalities. Reconsideration and allowance are respectfully requested.

In sections 9 and 10 of the Office Action, claims 1-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Elkin et al., U.S. Patent No. 6,123,174. This rejection is respectfully traversed.

Claim 1 is directed to a method for manual lubrication of a plurality of lubrication points. Claim 1 recites that each of the lubrication points are provided with individual identification information on the quantity of lubricant that is to be administered to each individual lubrication point. Claim 1 further recites that each instance of lubrication is stored in a memory, and that, in

the lubrication of a lubrication point, the identification of the point is detected and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory, following which the quantity of lubricant is administered to the lubrication point, and information on the lubrication carried out and time thereof is stored in the memory.

The configuration recited by claim 1 is advantageous to, for example, provide manual lubrication to a device such as a paper machine that includes a plurality of lubrication points requiring differing amounts of lubricant. See page 1, lines 4-9 of the present application.

In contrast, Elkin discloses an apparatus and method for automatically changing fluids, such as the oil, in a vehicle. See the abstract of Elkin. Therefore, as noted in the rejection, although Elkin may disclose information related to an amount of oil to dispense into a crankcase of a vehicle, Elkin does not suggest a method for manual lubrication of a plurality of lubrication points, as recited by claim 1.

The rejection states that it would have been obvious to modify the single lubrication point disclosed in Elkin with a plurality of lubrication points, since duplication is generally recognized to be within the level of ordinary skill in the art. This characterization and assertion are respectfully traversed.

If the method and apparatus disclosed in Elkin were merely duplicated, the result would be the lubrication of a multitude of single lubrication points. Elkin does not disclose or suggest lubrication of a plurality of lubrication points of a car. Therefore, if the disclosure of Elkin were applied to and duplicated with respect to, for example, paper machines, the result would be a plurality of paper machines wherein each paper machine has a single lubrication point lubricated. Such a result would not be desirable, and one skilled in the art would not be motivated to modify Elkin in this manner. Therefore, for at least this reason, Elkin cannot be modified by simple duplication to accomplish the method recited by claim 1.

For at least these reasons, Elkin fails to render claim 1, as well as claims 2-5 that depend therefrom, obvious. Reconsideration and allowance are respectfully requested.

In section 11 of the Office Action, claims 6, 8, and 9 were rejected under section 103(a) as being unpatentable over Elkin in view of Pollock, U.S. Patent No. 5,923,572. This rejection is respectfully traversed.

Claim 6 is directed to a device for manual lubrication of a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point. Pollock does

not remedy the shortcomings noted in Elkin. Therefore, for at least the same reasons expressed above with respect to claim 1, neither Elkin nor Pollock render claim 6 obvious.

Reconsideration and allowance of claim 6, as well as claims 8 and 9 that depend therefrom, are respectfully requested.

Favorable reconsideration in the form of a Notice of Allowance is respectfully requested in view of the above amendments and remarks. The Examiner is encouraged to contact the undersigned attorney with any questions regarding this application.

Respectfully submitted,

MERCHANT & GOULD P.C.  
Post Office Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Dated: April 16, 2003



By   
John J. Gresens  
Reg. No. 33,112  
JJG/RAK



UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/009,165      | 11/07/2001  | Paer-Olof Funck      | 11709.46USWO ✓      | 8653             |

23552 7590 01/16/2003  
MERCHANT & GOULD PC  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

JJG



EXAMINER

VAN PELT, BRADLEY J

ART UNIT

PAPER NUMBER

3682

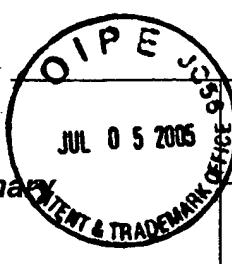
DATE MAILED: 01/16/2003

Resp. 3/PTA: Apr. 16, 2003

Resp. STAT: July 16, 2003 ✓

Please find below and/or attached an Office communication concerning this application or proceeding.

PROLAW



Application No.

10/009,165

Applicant(s)

FUNCK ET AL.

Examiner

Bradley J Van Pelt

Art Unit

3682

## Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) Responsive to communication(s) filed on 11/7/01.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4) Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-9 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3

4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_

Art Unit: 3682

**DETAILED ACTION***Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it exceeds 150 words and includes "Means" line 19. Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

**Arrangement of the Specification**

3. As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program

listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).

"Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. The disclosure is objected to because of the following informalities: the abstract, line 9 "tine" should be changed to --time--, line 13 "lubricant gum" should be changed to --lubricant gun--; the content of the specification should not refer to claim language see pg. 1, lines 2, 21, and 23.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It

is unclear how the memory as set forth in claim 6, as a control element, defined in the specification as (8) can be a fixed computer, because the control element (8) is movable as shown in the drawings.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the memory data" in line 18. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the computer memory" in line 4. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elkin et al. (USPN 6,123,174).

Elkin et al. disclose a method in the manual lubrication of a lubrication point with a quantity of lubricant individually predetermined for the lubrication point, characterized in that the lubrication point is provided with an individual identification information (column 16, lines

8-13) on the quantity (column 16, line 15) of lubricant that is to be administered to the lubrication point in each instance of lubrication is stored in a memory (column 16, lines 13-16), in the lubrication of a lubrication point the identification of the point is detected (bar code reader 216 see column 20, lines 30-40) and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory (column 20 lines 25-29), following which the said quantity of lubricant is administered to the lubrication point, information on the lubrication carried out and the time thereof is stored in the memory (column 26, lines 41-45).

Elkin et al. disclose that on identification of an individual lubrication point the quantity of lubricant is shown that is to be administered (column 25, lines 12-17) to the lubricant point in question and that when the said quantity has been administered this is shown and/or indicated by audible means (column 25, lines 24-27).

Elkin et al. disclose that a list of lubrication points (engines and vehicles) visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory (column 26 lines 42-47).

Elkin et al. inherently disclose in that the time for a subsequent lubrication round information on the quantity of lubrication for the individual lubrication point is calculated from information stored in the memory. Elkin et al. disclose (column 16, lines 11-16) the database tracks which services have been performed, thus it is calculated either by computer or user when next operation is due.

Elkin et al. fail to show more than one lubrication point.

Elkin et al. fail to show in connection with a planned lubrication round information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory

is fed from that memory to a second mobile memory and that after carrying out the lubrication round the said information is transmitted from the second memory to the aforementioned memory.

Pollock (USPN 5,923,572) shows a memory (56) being fed from that memory to a second mobile memory (30 mounted on hose is mobile) and that after carrying out an operation the information is transmitted from the second memory to the aforementioned memory (column 3, lines 60-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the single lubrication point of Elkin et al. with a plurality of lubrication points since such a modification is mere duplication. Duplication of parts is generally recognized as being within the level of ordinary skill in the art (In re HARZA, 124 USPQ 378 (CCPA 1960)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the memory transmitting device of Elton et al. by adding a second mobile memory, as taught by Pollock, for the purpose of eliminating need for operator input, which reduces the labor cost.

11. Claims 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elkin et al. (USPN 6,123,174) in view of Pollock (USPN 5,923,572).

Re: claim 6, Elkin et al. disclose a device for manual lubrication of a lubrication point with a quantity of lubricant individually predetermined for each lubrication point, characterized in that the device comprises a combination of: an identification element unique to the lubrication point (bar code, see column 16, line 56) unique to the lubrication point at a lubrication point (engine in Elkin) and a measuring device (78), a reservoir (24) which is connected by way of a

pump device (76) and a measuring device (78) with indicating element (96) and a dispensing apparatus (166).

Elkin et al. fail to show more than one lubrication point.

Elkin et al. do not disclose a lubricant gun with a lubricant reservoir which is connected by way of a pump device and the pump device connected to which control element connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point, with which memory the lubricant gun is designed to communicate for transfer to the control element of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element on the lubrication carried out at the individual lubrication points, and a lubrication point identification device arranged in connection with the nozzle and designed, when the nozzle is connected to a lubrication point, to automatically identify the lubrication point in question and its lubrication requirement by means of the identification element together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.

Elkin et al. fail to show communications equipment composed of radio communications equipment.

Elkin et al. fail to show that the control element comprises memory elements designed to store the said data and information for a time interval between the beginning and end of one operation round and that the memory elements are designed to communicate with the computer memory.

Pollock shows a gun (12) with a reservoir (inherent) which is connected by way of a pump device (45) and a measuring device (44) to a nozzle (end portion of dispenser), a control element (24) connected to the measuring device and the pump device connected to which control element is a memory containing stored data (30) of an individual point, with which memory the gun is designed to communicate for transfer to the control element of a quantity specification (column 4, lines 4-17) for a lubrication point and for feeding information stored in the control element on the operation carried out at the individual point (also column 4, lines 4-17), and a point identification device (21) arranged in connection with the nozzle and designed, when the nozzle is connected to a point, to automatically identify the point in question and its requirement by means of the identification element together with means for storing in the memory data on the quantity administered to the point in question in each operation (column 3, lines 65-67, column 4, lines 1-3).

Re: claim 8, Pollack shows communications equipment composed of radio communications equipment (38, 39, 71, 72).

Re: claim 9, Pollock shows that the control element (24) comprises memory elements (84) designed to store the said data and information for a time interval between the beginning and end of one operation round and that the memory elements are designed to communicate with the computer memory (30).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the single lubrication point of Elkin et al. with a plurality of lubrication points since such a modification is mere duplication. Duplication of parts is generally recognized as being within the level of ordinary skill in the art (In re HARZA, 124 USPQ 378 (CCPA 1960)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the dispensing apparatus of Elkin et al. with the gun dispenser, and the control element to communicate with an identification point, as taught by Pollack, for the purpose of eliminating need for operator input, which reduces the labor cost.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the communications apparatus of Elkin et al. with the radio communication, as taught by Pollack for the purpose of a wireless transmission, which decreases the overall response time.

It would have been obvious to one of ordinary skill in the art at the time, as taught by Pollack of the invention to modify the apparatus of Elkin et al. to utilize memory storage and communication for the purpose of tracking the quantity dispensed of the lubrication apparatus to accurately calculate total sales, further maximizing profits.

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. For liquid dispensing and automation see the following references: Haller et al. (USPN 3,779,357), Van Ness (USPN 4,263,945), Ryan (USPN 5,204,819), Prendergast (USPN 5,873,731), Graft et al. (USPN 6,125,969).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley J Van Pelt whose telephone number is (703)305-8176. The examiner can normally be reached on M-Th 7:00-4:30, 2nd F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on (703)308-3668. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3597.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-2168.

BJVP *BSM*  
January 13, 2003

CHONG H. KIM  
PRIMARY EXAMINER

Date Mailed: November 7, 2001

10/009165

Sheet 1 of 1  
RECD PCT/PTO

07 NOV

|  |  |                                |  |
|--|--|--------------------------------|--|
| FORM 1449*<br>INFORMATION DISCLOSURE STATEMENT<br>IN AN APPLICATION<br>(Use several sheets if necessary) |  | Docket Number:<br>11709.46USWO | Application Number:<br>unknown         |
|  |  | Applicant: Funck, et al.       |  |
|  |  | Filing Date: November 7, 2001  | Group Art Unit: <u>unknown</u><br>3682 |



| U.S. PATENT DOCUMENTS |              |      |      |       |          |                            |
|-----------------------|--------------|------|------|-------|----------|----------------------------|
| EXAMINER INITIAL      | DOCUMENT NO. | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|                       |              |      |      |       |          |                            |
|                       |              |      |      |       |          |                            |
|                       |              |      |      |       |          |                            |
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| FOREIGN PATENT DOCUMENTS |              |             |         |       |          |             |
|--------------------------|--------------|-------------|---------|-------|----------|-------------|
|                          | DOCUMENT NO. | DATE        | COUNTRY | CLASS | SUBCLASS | TRANSLATION |
|                          |              |             |         |       |          | YES         |
| <i>SGH</i>               | 0926426      | 30-JUN-1999 | EUROPE  |       |          |             |
|                          |              |             |         |       |          |             |
|                          |              |             |         |       |          |             |
|                          |              |             |         |       |          |             |
|                          |              |             |         |       |          |             |

| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) |  |   |  |  |  |  |
|--|--|---|--|--|--|--|
|  |  | International Search Report, July 27, 2000. |  |  |  |  |
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|   |                               |
|---|-------------------------------|
| EXAMINER <i>John Doe</i>  | DATE CONSIDERED <i>1/7/03</i> |
| EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant. |                               |



### Notice of References Cited

Application/Control No.  
10/009,165

Applicant(s)/Patent Under  
Reexamination  
FUNCK ET AL.

Examiner  
Bradley J Van Pelt

Art Unit  
3682

Page 1 of 1

#### U.S. PATENT DOCUMENTS

| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name                    | Classification |
|---|--|-----------------|-------------------------|----------------|
| A | US-3,779,357                                     | 12-1973         | Haller et al.           | 194/212        |
| B | US-4,263,945                                     | 04-1981         | Van Ness, Bradford O.   | 141/98         |
| C | US-5,204,819                                     | 04-1993         | Ryan, Michael C.        | 705/413        |
| D | US-5,873,731                                     | 02-1999         | Prendergast, William K. | 434/262        |
| E | US-5,923,572                                     | 07-1999         | Pollock, Stephen F.     | 700/282        |
| F | US-6,123,174                                     | 09-2000         | Elkin et al.            | 184/1.5        |
| G | US-6,125,969                                     | 10-2000         | Graf et al.             | 184/105.1      |
| H | US-  |                 |                         |                |
| I | US-  |                 |                         |                |
| J | US-  |                 |                         |                |
| K | US-  |                 |                         |                |
| L | US-  |                 |                         |                |
| M | US-  |                 |                         |                |

#### FOREIGN PATENT DOCUMENTS

| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | Classification |
|---|--|-----------------|---------|------|----------------|
| N |  |                 |         |      |                |
| O |  |                 |         |      |                |
| P |  |                 |         |      |                |
| Q |  |                 |         |      |                |
| R |  |                 |         |      |                |
| S |  |                 |         |      |                |
| T |  |                 |         |      |                |

#### NON-PATENT DOCUMENTS

| * | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|
| U |   |
| V |   |
| W |   |
| X |   |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



# Attachment for PTO-948 (Rev. 03/01, or earlier)

6/18/01

The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.

## INFORMATION ON HOW TO EFFECT DRAWING CHANGES

### 1. Correction of Informalities ~ 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTO-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

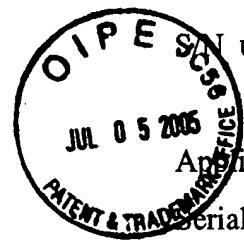
### 2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

#### Timing of Corrections

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a).

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.



SN unknown

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Funck, et al. Docket No.: 11709.46USWO  
Serial No.: unknown Filed: concurrent herewith  
Int'l Appln No.: PCTSE0000979 Int'l Filing Date: May 18, 2000  
Title: METHOD IN AND DEVICE FOR THE MANUAL LUBRICATION OF A PLURALITY OF LUBRICATION POINTS

**CERTIFICATE UNDER 37 CFR 1.10**

'Express Mail' mailing label number: EL669945457US

Date of Deposit: November 7, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service 'Express Mail Post Office To Addressee' service under 37 CFR 1.10 and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

By:   
Name: Chris Stordahl

PRELIMINARY AMENDMENT

Box PCT  
Assistant Commissioner for Patents  
Washington, D. C. 20231

Dear Sir:

In connection with the above-identified application filed herewith, please enter the following preliminary amendment (marked-up copy attached):

IN THE ABSTRACT

Insert the attached Abstract page into the application as the last page thereof.

IN THE SPECIFICATION

A courtesy copy of the present specification is enclosed herewith. However, the World Intellectual Property Office (WIPO) copy should be relied upon if it is already in the U.S. Patent Office.

IN THE CLAIMS

Please amend the following claims:

3. (AMENDED) Method according to claim 1, characterised in that on identification of an individual lubrication point (10) the quantity of lubricant is shown that is to be administered to the lubrication point in question and that when the said quantity has been administered this is shown (5) and/or indicated by audible means (16).
4. (AMENDED) Method according to claim 1, characterised in that a list (17) of lubrication points visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from the memory (8; 12).
5. (AMENDED) Method according to claim 1, characterised in that the time for a subsequent lubrication round and information on the quantity of lubricant for the individual lubrication points is calculated from information stored in the memory (8; 12).

REMARKS

The above preliminary amendment is made to remove multiple dependencies from claims 3, 4, and 5. Please refer to the Marked-Up claim page 4, attached herewith.

A new abstract page is supplied to conform to that appearing on the publication page of the WIPO application, but the new Abstract is typed on a separate page as required by U.S. practice.

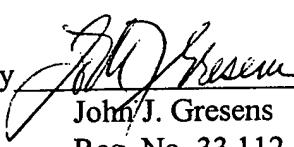
Applicants respectfully request that the preliminary amendment described herein be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, John J. Gresens (Reg. No. 33,112), at (612) 371.5265.

Respectfully submitted,

MERCHANT & GOULD P.C.  
Post Office Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Dated: November 7, 2001

By   
John J. Gresens  
Reg. No. 33,112

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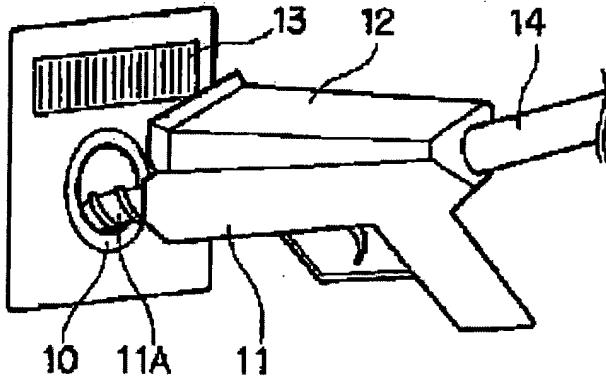
## OIL FEEDING NOZZLE

**Patent number:** JP5170298  
**Publication date:** 1993-07-09  
**Inventor:** SHIDA KENJI  
**Applicant:** NIPPON DENKI OFFICE SYST  
**Classification:**  
- **international:** B67D5/12; B67D5/37; G06K7/10  
- **europen:**  
**Application number:** JP19910333241 19911217  
**Priority number(s):** JP19910333241 19911217

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### Abstract of JP5170298

**PURPOSE:** To input within a short time particular information such as oil feeding volume information, a customer code and a car number. **CONSTITUTION:** A bar code scanner 12 which is an optical reading means is mounted on an oil feeding nozzle body 11 of an oil feeder. When a pipe 11A of the oil feeding nozzle body 11 is inserted into an oil feeding port 10, the bar code scanner 12 reads a bar code 13 attached in the vicinity of the oil feeding port 10, which has customer information such as a car number, a customer code and oil feeding volume information. Then the scanner 12 sends the customer information to a superior device through a transmitting means. By this, oil feeding work at a gas station can be improved in the efficiency and realization of the work becomes possible.



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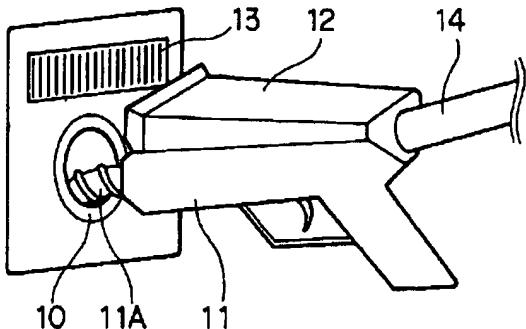
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| (21)出願番号 | 特願平3-333241      | (71)出願人 | 000232058<br>日本電気オフィスシステム株式会社<br>東京都港区芝4丁目13番2号 |
| (22)出願日  | 平成3年(1991)12月17日 | (72)発明者 | 志田 健治<br>東京都港区芝4丁目13番2号 日本電気オ<br>フィスシステム株式会社内   |
|          |                  | (74)代理人 | 弁理士 山内 梅雄                                       |
|          |                  |         |   |

(54)【発明の名称】給油ノズル

(57)【要約】

【目的】給油量情報、顧客コード、車輌番号等の個別情報 を短時間でかつ確実に入力できるようにする。

【構成】給油機の給油ノズル本体11に光学読取手段であるバーコードスキャナ12を取り付ける。このバーコードスキャナ12は、給油口10に給油ノズル本体11のパイプ11Aが差し込まれたとき、給油口10の近傍に貼り付けてある車輌番号、顧客コード、給油量情報等の顧客情報を有するバーコード13を読み取り、送信手段を介してこの顧客情報を上位装置に送信する。これによって、給油所における給油作業の効率化、合理化を図ることが可能となる。



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## 【特許請求の範囲】

【請求項1】 給油口に給油を行う給油ノズル本体と、給油口近傍に設けられた情報を読み取る光学読取手段と、この光学読取手段により読み取った情報を上位装置に送る送信手段とを備えたことを特徴とする給油ノズル。

【請求項2】 光学読取手段はバーコードスキャナであることを特徴とする請求項1記載の給油ノズル。

【請求項3】 バーコードスキャナは給油口付近に貼り付けられた車輌番号、顧客コード、給油量情報等の顧客情報を有するバーコードを読み取るよう構成されることを特徴とする請求項2記載の給油ノズル。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】 本発明は自動車等に使用される給油ノズルに関する。

## 【0002】

【従来の技術】 一般に給油ノズルは、自動車等にガソリン、軽油等を給油するために、給油所等において給油機の一部として使用されている。

【0003】 従来の給油ノズルの一例を図2に示す。従来の給油ノズルにおいては、自動車の給油を行う給油ノズル本体1が、油を送るホース2を介して給油機本体3に取り付けられている。また、この給油機本体3は、上位装置4と接続されている。

【0004】 次に、従来の給油ノズルの動作について説明する。給油所に顧客が来店すると、所員は給油にさきがけて、給油機本体3の上位装置4から、顧客データ、給油量等をIDカードやキーボードによって入力し、給油機を給油可能状態とする。この後、所員は給油機本体3より給油ノズル本体1を取り上げ、パイプ1Aを自動車の給油口に差し込み、給油開始のスイッチをオンとすることにより、ホース2から油が送られ、給油を行う。

## 【0005】

【発明が解決しようとする課題】 しかしながら、上述した従来の給油ノズルにおいては、顧客データ等の入力手段を備えていない。このため、これらのデータを入力するためには、所員が上位装置4の所まで入力しに行かなければならず、来客から給油開始までに時間がかかってしまうという問題があった。また、顧客の個別情報を管理するために、顧客にID(identification)カードを発行するが、このIDカードを紛失したり、あるいは来店時に忘れたりすると、IDカードの入力ができないという問題があった。さらに、車輌情報の管理のためには、所員が自動車のナンバープレートを見て屋外端末から入力を行わなければならないので、入力のための手間がかかり、かつ入力ミスを行う可能性もあるという問題があった。

【0006】 本発明の目的は、上述した問題に鑑みなされたもので、給油量情報、顧客コード、車輌番号等の個

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別情報を短時間でかつ確実に入力することができる給油ノズルを提供するにある。

## 【0007】

【課題を解決するための手段】 請求項1記載の発明は、給油口に給油を行う給油ノズル本体と、給油口近傍に設けられた情報を読み取る光学読取手段と、この光学読取手段により読み取った情報を上位装置に送る送信手段とを備えた構成としたものである。

【0008】 請求項2記載の発明は、光学読取手段がバーコードスキャナであることを特徴とする。

【0009】 請求項3記載の発明は、バーコードスキャナが給油口付近に貼り付けられた車輌番号、顧客コード、給油量情報等の顧客情報を有するバーコードを読み取るよう構成されていることを特徴とする。

## 【0010】

【作用】 本発明によれば、給油ノズルに光学読取手段を設け、この光学読取手段により給油口近傍に設けられた車輌番号、顧客コード、給油量情報等の情報を読み取り、送信手段を介して上位装置へ電送可能となっている。したがって給油時の操作が短時間でかつ正確に行える。

## 【0011】

【実施例】 次に、本発明について図面を参照して説明する。図1は本発明に係わる給油ノズルの一実施例を示す斜視図である。自動車等の給油口10に給油を行う給油ノズル本体11の上部には、光学読取手段、本実施例にあってはバーコードスキャナ12が取り付けられている。このバーコードスキャナ12は給油口10の上部近傍に貼り付けられたバーコード13を読み取るよう構成されている。このバーコード13は、バーコードスキャナ12で読み取りが可能な位置、すなわちバーコードスキャナ12の焦点位置に貼り付けておく。また、このバーコード13には、車輌番号、顧客コード、給油量情報等の入力したいデータを予めエンコードしておく。一方、バーコードスキャナ12で読み取られたバーコード13の顧客情報は送信手段(図示せず)を介して上位装置(図示せず)に送信されるようになっている。なお、給油ノズル本体11はホース14を介して給油機本体(図示せず)に取り付けられている。

【0012】 次に、本実施例の給油ノズルの動作について説明する。顧客が給油所に来店したとき、所員は顧客より給油量を聞き、給油口10に給油ノズル本体11のパイプ11Aを差し込む。これにより、予め車輌番号、顧客コード、給油量情報等の顧客情報をエンコードし、給油口10付近に貼り付けられたバーコード13とバーコードスキャナ12が接近し、バーコード13の情報が読み取り可能となる。そして、このバーコード13の情報がバーコードスキャナ12に入力されると、送信手段を介して顧客情報が上位装置に電送される。この上位装置はバーコード13の情報を受信した後、この情報の判

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別を行う。そして、給油機本体が給油可能状態となったとき、給油開始スイッチをオン状態とすることにより給油が開始される。

【0013】このように本実施例によれば、給油ノズルすなわち、所員の手もとから顧客コード、車輌番号等が入力できるので、来店時に円滑に情報の入力が可能となる。またキーボード等からの手入力による情報入力ではなく、バーコード入力であるため、正確な情報入力が可能となる。

【0014】なお、上述した実施例においては、給油所における自動車への給油を例に挙げたが、別にこれに限定されるものではなく、上述した給油ノズルを、灯油の宅配用の車載給油計量機に適用してもよい。この場合、各家庭に配置された灯油タンクにバーコードを貼り付けておくことにより、顧客管理の自動化を図ることが可能となる。また、上述した実施例においては、給油ノズル本体11にバーコードスキャナ12を取り付けた例について述べたが、光学読取手段は別にこのバーコードスキャナに限定されるものではなく、OCR(optical character reader)スキャナ、OMR(optical mark reader)スキャナ等の光学読取手段を設けても上述した実施例と同様の効果が得られることはもちろんである。

## 【0015】

【発明の効果】以上説明したように本発明に係わる給油ノズルによれば、給油口に給油を行う給油ノズル本体と、給油口近傍に設けられた情報を読み取る光学読取手段と、この光学読取手段により読み取った情報を上位装置に送る送信手段とを備えた構成としたことにより、前記光学読取手段により給油口近傍に設けられた車輌番号、顧客コード、給油量情報等の情報を即座に読み取り、この情報を送信手段を介して上位装置へ電送可能となった。したがって、従来に比べて給油時の操作が短時間でかつ正確にできるという優れた効果を奏する。

## 【図面の簡単な説明】

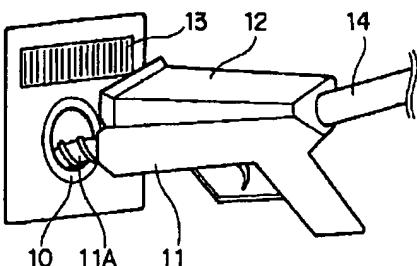
【図1】本発明に係わる給油ノズルの一実施例を示す斜視図である。

【図2】従来の給油ノズルの一例を示す概略構成図である。

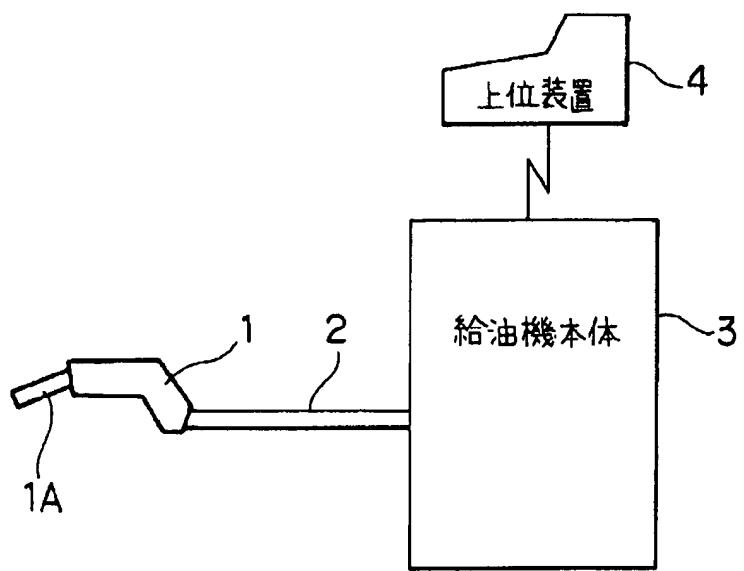
## 【符号の説明】

|    |           |
|----|-----------|
| 10 | 給油口       |
| 11 | 給油ノズル本体   |
| 12 | バーコードスキャナ |
| 13 | バーコード     |

【図1】



【図2】



ALEXANDRU NICA

Doctor of Technical Sciences  
Head of Hydrodynamic Lubrication Laboratory  
Institute of Fluid Mechanics  
Bucharest

# THEORY AND PRACTICE OF LUBRICATION SYSTEMS

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Translated and revised by

**ALEXANDRU NICA**

and

**P. A. J. SCOTT**

Doctor of Technical Sciences  
Manager, Hydrostatic Bearings Section  
Glacier Research and Development Organisation  
Great Britain

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## CHAPTER III

### Principal Elements and Construction of Lubrication Systems

A general classification of the methods of distributing oil or grease to the moving parts of a machine or installation, can be best summarized in tabular form (Table 3-1), [1]. It should be pointed out that some of the supply methods can be used for both oils and greases.

Table 3-1

|                |              | Total loss systems |  | Recuperative systems   |
|----------------|--------------|--------------------|--|--|
| Semiauto-matic | Low pressure | Oils               | Drip feed<br>Wick feed<br>Oil Mist<br>Manual, mechanical or pneumatic oil feed by shots          | Ring or chain and oil bath<br>Splash feed from sump<br>Porous rubbing surfaces |
|                |              | Greases            | Pre-packing<br>Funnel feed<br>Routine pressure packing by piston or external pump                |  |
|                |              | Open circuit       |  | Closed circuit   |
| Auto-matic     | Low pressure | Oils and greases   | Gravity feed from reservoir<br>Hydrostatic, pneumatic, electric or mechanically controlled pumps | Recovery with wet or dry sump  |
|                |              |                    | Centralised open systems<br>Oil sprays   | Recovery with wet or dry sump  |

### 3.1. Semiautomatic Systems

Bearings lubricated by rings, wicks or gravity feed, do not need regular attention, and the oil bath and means of supply are usually integral with the load bearing elements.

The design of such bearings is outlined in [2] and in other works on hydrodynamic lubrication [3], [4]. These systems are prone to oil contamination since they are usually difficult to seal effectively against the intrusion of foreign matter.

Greasing methods are widely described in published literature. It is worth pointing out at this stage, that although the use of greases generally permits the simple and inexpensive design of supply devices, they have certain intrinsic disadvantages since a complete lubricant layer is difficult to provide before the bearing reaches its running temperature, and therefore greases do not lend themselves to application in cases of intermittent motion and intermittent use, high starting loads, etc.

Hence, for more stringent environments, loads, and usage, where reliability is a costly commodity, a pressurized centralised oil supply is generally used to overcome these difficulties.

One intermediate solution which does not involve a central supply system but provides lubricant under pressure, at a given moving contact, leads to the applications shown in Figs. 3-1, 3-2, 3-3 and 3-4, [5].

Fig. 3-1 shows a manually operated oil or grease supply unit, which is used where no continuous power source is available and in situations when human surveillance is practical, e.g. farm implements or light production machinery. This system cannot provide a continuous lubricant supply and relies upon the operator for its successful application.

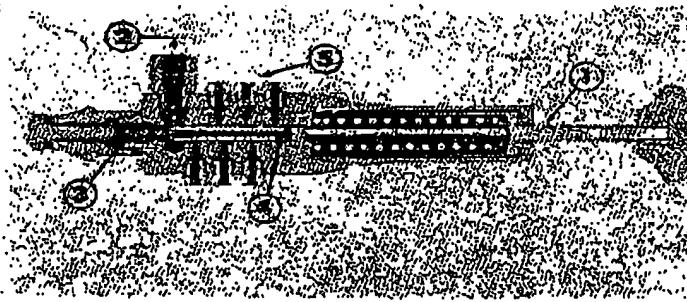


Fig. 3.1. — Manually operated semiautomatic lubricating system [5]: 1 — pump handle and piston; 2 — lubricant inlet; 3 — measuring chamber; 4 — supply duct; 5 — supply ports.

Where the lubricant requirements can be linked to some action of the machinery and a source of energy is available, the feed system can be made semiautomatic, usually with some overriding manual control.

Fig. 3-2 shows a vacuum operated device used, for instance, where manifold pressure, or the application of vacuum brakes indicates to some measure the extent to which the bearings are used, or simply, where negative air pressure is readily available and manual contact is inconvenient.

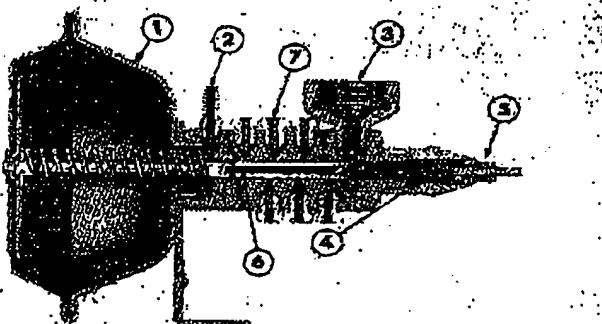


Fig. 3.2. — Vacuum operated semiautomatic lubricating system [5]: 1 — vacuum diaaphragm; 2 — vacuum inlet; 3 — lubricant inlet; 4 — measuring chamber; 5 — electric contact assembly; 6 — supply duct; 7 — supply ports.

This device requires a minimum vacuum of 42 mm Hg for operation, and is provided with an electrical display system for manual control.

A compressed air supply is generally available, and Fig. 3-3 shows a similar device used on heavy transport vehicles and various factory equipment. This particular device lends itself to control by mechanical means, linked to some degree with the requirements of the bearings it supplies, or even to control by fixed time cycle devices.

The minimum air supply pressure is of the order of 50 psi ( $4 \text{ kg/cm}^2$ ).

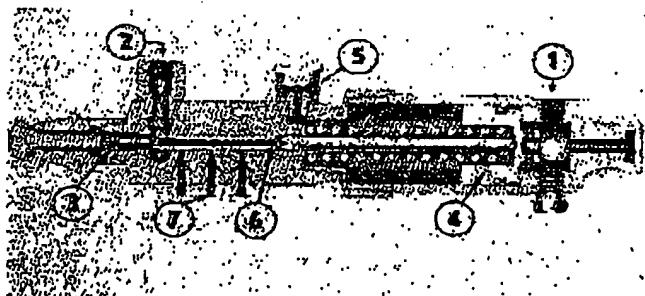


Fig. 3.3. — Air operated semiautomatic lubricating system [5]: 1 — air inlet; 2 — lubricant inlet; 3 — measuring chamber; 4 — air piston; 5 — filter; 6 — supply duct; 7 — supply ports.

Fig. 3-4 shows a mechanically operated device, employing reciprocating or rotary motion as its motive force. This device can supply as many as 12 lubrication points at once, and the feed to each can be metered to meet its individual requirements [5].

### 3.2. Automatic Systems

The devices outlined in the previous section were either manually operated and controlled, or semiautomatic (inasmuch as the motive force was not manual and the metering dependent on the functioning of the

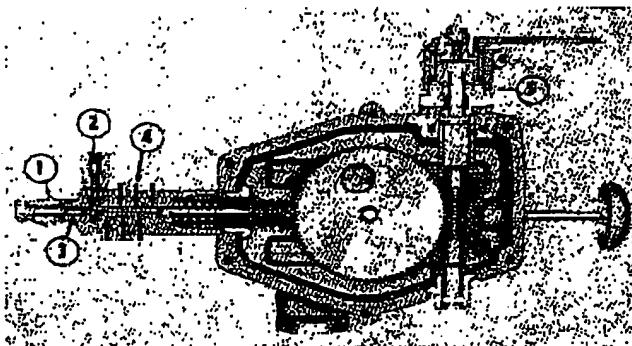


Fig. 3.4. — Mechanically operated semiautomatic lubricating system, [5]: 1 — nose plug; 2 — lubricating inlet; 3 — measuring chamber; 4 — supply ports; 5 — clutch assembly.

installation) with provision for overriding manual control. To remove reliance on the operator, and to provide continuous lubricant control, it is clearly necessary to use pumps and to centralize the distribution to a greater extent so as to reduce costs.

Automatic systems provide economic and reliable means of supplying lubricant to multiple bearing installations, their design being of some technical complication involving work on pipe flow developed in the previous chapter. It is worth noting that the systems outlined in this section are generally for cycle operation, that is with discontinuous metering to the lubrication points.

#### 3.2.1. Low Pressure Centralized Systems

This category of automatic feed devices includes gravity fed systems as well as low pressure pumped systems ( $1 - 5 \text{ kg/cm}^2$ ).

**3.2.1.1. Gravity Feed.** The lubricant is stored at a high level in a large reservoir and the system is simply closed by the addition of a scavenging pump.

Clearly these systems can only be used in low flow applications under light loads. Fig. 3-5 represents one example of such a device used in this case to lubricate a steam engine.

**3.2.1.2. Low Pressure Pump Systems.** As in the previous example these supply systems can be closed or open circuits depending on the economic justification of the inclusion of a scavenge pump to recu-

perate the used oil. However this method allows the use of a single pump for both supply and scavenging, instead of two separate pumps and a reservoir.

The design of these devices is simple, since the lubricant is metered through fixed valves or jets, but due to their low pressure, the pipes cannot be too long, and no hydrostatic effects to relieve starting torque and wear can be expected.

Fig. 3-6 shows two practical variants, one using a gear pump (Fig. 3-6 a) and the other a piston pump (Fig. 3-6 b).

The pumps can be powered from any convenient source and it is also possible to control their action to match the supply to the requirements of the installation. It is possible to feed numerous lubrication points from one central pump system, and lubricant contamination presents no problem.

Certain problems concerning the metering of oil to each lubrication point are encountered with this method and the means of overcoming these disadvantages are discussed in Chapter V.

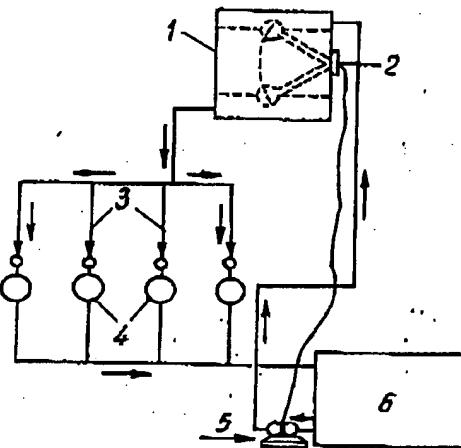


Fig. 3.5. — Gravity feed centralized system:  
1 — oil sump; 2 — electric switch for the pump; 3 — supply ducts; 4 — bearings; 5 — recirculating pump; 6 — main sump.

### 3.2.2. High Pressure Centralized Systems

These systems generally employ metering devices actuated by the lubricant supply pressure, to overcome the uncertainties intrinsic in low pressure circuits. They can be used efficiently to provide lubricant to a few points or several thousand, and when correctly designed and operated can bring important direct and indirect savings in the operating costs of an installation. This being mainly due to increased reliability and more precise metering possible with these systems, in addition to the removal of costly operator supervision by full instrumentation and the provision of display panels to indicate directly and immediately the functioning of the entire installation.

In order to outline the design of these networks it is helpful to divide them into classes. For instance, the metering elements can be installed in series or parallel. The network can be based on a single or double pressure line, and the flow can be unidirectional or reversible. The metering devices themselves can be of different forms e.g. piston valves or springs.